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Marco Dellacasa

CONTRIBUTION A WORLD-WIDE CATALOGUE OF
AEGIALIIDAE, APHODIIDAE, AULONOCNEMIDAE,
TERMITOTROGIDAE

(Coleoptera Scarabaeoidea)

PART II

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- 0362.00 Veroffentlichungen der staatlichen Stelle fur Naturschutz beim wurttembergischen Landesam fur Denkmalflege. Stuttgart. *Ver. st. Stel. Nat. wur.*, Stuttgart. 1924-1934; @ 0362.01. Veroff. st. Stelle NatSchutz. wurtt.

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- 0362.02 Veröffentlichungen der Württembergischen Landesstelle für Landschaftspflege in Ludwigsburg und Tübingen. Stuttgart. *Ver. wurt. Land. Land.*, Stuttgart. # 0362.01; 1951-1957. Veroff. wurt. Landest. Landschftl.
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- 0385.00 Verslagen van de Wekzaamheden der Eerste Klasse van het Koninklijke Instituut van Wet. Lett. Schoone Kunsten. Amsterdam. *Versl. Wer. k. Inst. W.*, Amsterdam. 1809-1816; @ 0385.01. Versl. Werkz. kon. Inst. Wet. Amst.
- 0319.00 Vestnik Zoologii Institut Zoologii. Akademia Nauk ukrainskoi SSR. Kiev. *Vestnik Zool. Inst. Zool.*, Kiev. 1, 1967+. Vestn. Zool. Kiev.
- 0318.00 Victorian Naturalist. Melbourne. *Victorian Nat.*, Melbourne. 1, 1884+. Victorian Nat.
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- 0210.00 Zeitschrift fur die Entomologie, herausgegeben von Ernst Friedrich Germar. Leipzig. *Zeitschr. Ent. Germar*, Leipzig. 1-5, 1839-1844; @ 0210.01. *Z. Ent. (Germar)*.
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- 0331.00 Zeitschrift fur Morphologie und Okologie der Tiere. Berlin. *Zeits. morph. Okol. Tiere.*, Berlin. 1924-1967; @ 0331.01; *Z. morph. Okol. Tiere.*
- 0323.03 Zeitschrift fur Naturwissenschaften. Halle. *Zeits. Naturwiss.*, Halle. # 0323.02; 1882-1941. *Z. Naturw. Halle.*
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- 0179.03 Zeitschrift fur wissenschaftliche Insektenbiologie. Berlin. *Zeits. wiss. Insektenb.*, Berlin. # 0179.02; 10-36, 1905-1937. *Z. wiss. InsektBiol.*
- 0014.00 Zeitschrift fur wissenschaftliche Zoologie. Leipzig. *Zeits. wiss. Zool.*, Leipzig. 1, 1848+. *Z. wiss. Zool.*
- 0005.02 Zoologica Scripta. Stockholm. *Zoologica Scripta*, Stockholm. # 0005.01; 1, 1971+. *Zoologica Scr.*
- 0278.01 Zoological Record. London. *Zool. Record*, London. # 0278.00; 1870+. *Zool. Rec.*
- 0075.00 Zoologicheskii Sbornik Biologicheskii Institut, Akademiya Nauk Armyanskoi SSSR. Erevan. *Zool. Sbornik*, Erevan. 1, 1930+. *Zool. Sb. Erevan.*
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- 0326.00 Zoologische Jahrbucher. Zeitschrift fur Systematik, Geographie und Biologie der Thiere. Jena. *Zool. Jahrbucher*, Jena. 1, 1886+. Zool. Jb.
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- 0322.00 Zoologischer Anzeiger. Leipzig. *Zool. Anz.*, Leipzig. 1, 1878+. Zool. Anz.
- 0241.01 Zoologischer Mededeelingen. Leyden. *Zool. Mededeel.*, Leyden. # 0241.00; 1, 1915+. Zool. Mede. Leyden.
- 0012.00 Zoologisches Magazin. Kiel. *Zool. mag.*, Kiel. 1-2, 1817-1823. Zool. Mag. Kiel.

IX. SERIALS: ABBREVIATIONS LIST

- 0092.03 *A. ph.-m. Ac. c. L. -C.*, Francoforti.
 0029.01 *Ab. B. Mus. Tierk. Dresden*, Leipzig.
 0029.02 *Ab. B. Mus. Tierk. Dresden*, Leipzig.
 0207.00 *Abeille*, Paris.
 0031.11 *Abh. Akad. Wiss. DDR*, Berlin.
 0029.00 *Abh. Ber. K. Mus.*, Dresden, Berlin.
 0095.01 *Abh. Ber. Naturk.-mus.*, Gorlitz.
 0031.08 *Abh. deut. Akad. Wiss.*, Berlin.
 0031.09 *Abh. deut. Akad. Wiss.*, Berlin.
 0031.10 *Abh. deut. Akad. Wiss.*, Berlin.
 0031.06 *Abh. k. preuss. Akad. Wiss.*, Berlin.
 0095.00 *Abh. naturforsch. Ges.*, Gorlitz.
 0031.04 *Abh. preuss. Akad. Wiss.*, Berlin.
 0031.07 *Abh. preuss. Akad. Wiss.*, Berlin.
 0293.10 *Abstr. Proc. r. ent. Soc.*, London.
 0092.02 *Ac. C. Leop. Nat. cur.*, Francoforti.
 0237.02 *Acta Acad. Sci. imp.*, Petropoli.
 0203.03 *Acta Albert. ratisb.*, Regensburg.
 0041.00 *Acta biol. Venez.*, Caracas.
 0008.04 *Acta ent. bohemoslovaca*, Praha.
 0040.00 *Acta ent. jugoslav.*, Zagreb.
 0038.00 *Acta Mus. maced. Sci. nat.*, Skopje.
 0423.00 *Acta oecol., Oecol. appl.*, Paris.
 0414.00 *Acta oecol., Oecol. gen.*, Paris.
 0417.03 *Acta r. Soc. Scient. l.*, Goteborg.
 0045.00 *Acta zool. cracov.*, Krakow.
 0036.00 *Acta zool. lilloana*, Tucuman.
 0019.00 *Acta zool. mex.*, Mexico C.
 0017.01 *Actes Soc. linn.*, Bordeaux.
 0179.02 *Allg. Zeits. Wis. InsekB.*, Berlin.
 0100.01 *Am. Journ. t. Med. Hyg.*, Baltimore.
 0100.00 *Am. Journ. trop. Med.*, Baltimore.
 0129.00 *Amer. Journ. Sci.*, New Haven.
 0088.01 *American Midl. nat.*, Notre Dame.
 0141.00 *American Nat.*, Philadelphia.
 0030.02 *An. Inst. Biol.*, Mexico C.
 0030.00 *An. Inst. Biol. Univ.*, Mexico C.
 0030.01 *An. Inst. Biol. Univ.*, Mexico C.
 0042.00 *An. Mus. z. Ac. imp.*, S. Petersburg.
 0042.01 *An. Mus. z. Acad. imp.*, Petrograd.
 0042.02 *An. Mus. z. Acad. imp.*, Petrograd.
 0001.00 *An. Soc. cien. arg.*, Buenos Aires.
 0018.00 *Animalia*, Catania.
 0090.00 *Ann. Accad. Asp. Nat.*, Napoli.
 0090.01 *Ann. Accad. Asp. Nat.*, Napoli.
 0090.02 *Ann. Accad. Asp. Nat.*, Napoli.
 0090.03 *Ann. Accad. Asp. Nat.*, Napoli.
 0090.04 *Ann. Accad. Asp. Nat.*, Napoli.
 0090.05 *Ann. Accad. Asp. Nat.*, Napoli.
 0006.00 *Ann. ent. fenn.*, Helsingfors.
 0016.00 *Ann. ent. Soc. Amer.*, Columbus.
 0009.01 *Ann. Epiphyt.*, Paris.
 0430.00 *Ann. Eugenics*,
- # 0092.02; 1727-1754; @ 0092.04.
 # 0029.00; 16-20, 1923-1939; @ 0029.02.
 # 0029.01; 21-25, 1953-1960; @ 0029.03.
 1-23, 1864-1894.
 # 0031.10; 1973+.
 1-15, 1866-1922; @ 0029.01.
 # 0095.00; 1954+.
 # 0031.07; 1945-1954; @ 0031.09.
 # 0031.08; 1955-1966; @ 0031.10.
 # 0031.09; 1958-1968; @ 0031.11.
 # 0031.05; 1908-1918; @ 0031.07.
 1827-1942; @ 0095.01.
 # 0031.03; 1804-1829; @ 0031.05.
 # 0031.06; 1919-1944; @ 0031.08.
 # 0293.02; 1935-1936; @ 0293.11.
 # 0092.01; 1714-1722; @ 0092.03.
 # 0237.01; 1777-1782; @ 0237.03.
 # 0203.02; 1951+.
 1, 1951+.
 # 0008.03; 64, 1965+.
 1, 1965+.
 1953+.
 1, 1980+.
 1, 1980+.
 # 0417.02; 1967+.
 1, 1956+.
 1, 1943+.
 1, 1955+.
 # 0017.00; 1830-1968.
 # 0179.01; 6-9, 1901-1904; @ 0179.03.
 # 0100.00; 1952+.
 1921-1951; @ 0100.01.
 1, 1818+.
 # 0088.00; 1909+.
 1, 1867+.
 # 0030.01; 13, 1942+.
 1-3, 1930-1932; @ 0030.01.
 # 0030.00; 4-12, 1933-1941; @ 0030.02.
 1-18, 1896-1914; @ 0042.01.
 # 0042.00, 19-20, 1914-1915; @ 0042.02.
 # 0042.01. 21, 1916; @ 0042.03.
 1876-1882.
 1, 1974+.
 1-3, 1843-1846; @ 0090.01.
 # 0090.00; s. 2; 1-2, 1847; @ 0090.02.
 # 0090.01; s. 3; 1-6, 1861-1866; @ 0090.03.
 # 0090.02; s. 4; 1, 1867; @ 0090.04.
 # 0090.03; e. 2; 1-2, 1868-1869; @ 0090.05.
 # 0090.04; e. 3; 1887.
 1, 1935+.
 1, 1908+.
 @ 0009.00; 1920-1968.
 ...

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- 0091.00 *Ann. gen. Sci. phys.*, Bruxelles. 1-8, 1819-1821.
- 0024.01 *Ann. h. n. Mus. nat. hung.*, Budapest. # 0024.00; 26, 1903+.
- 0002.02 *Ann. Ist. Mus. Zool. Univ.*, Napoli. # 0002.01; 9, 1949+.
- 0015.00 *Ann. k. k. Naturh. Hofmus.*, Wien. 1-31, 1886-1917; @ 0015.01.
- 0411.00 *Ann. Lyceum nat. Hist.*, New York. 1-11, 1823-1876; @ 0411.01.
- 0086.03 *Ann. Mag. nat. Hist.*, London. # 0086.02; 6-20, 1841-1847; @ 0086.04.
- 0086.04 *Ann. Mag. nat. Hist.*, London. # 0086.03; s. 2; 1-20, 1848-1857; @ 0086.05.
- 0086.05 *Ann. Mag. nat. Hist.*, London. # 0086.04; s. 3; 1-20, 1858-1867; @ 0086.06.
- 0086.06 *Ann. Mag. nat. Hist.*, London. # 0086.05; s. 4; 1-20, 1868-1877; @ 0086.07.
- 0086.07 *Ann. Mag. nat. Hist.*, London. # 0086.06; s. 5; 1-20, 1878-1887; @ 0086.08.
- 0086.08 *Ann. Mag. nat. Hist.*, London. # 0086.07; s. 6; 1-20, 1888-1897; @ 0086.09.
- 0086.09 *Ann. Mag. nat. Hist.*, London. # 0086.08; s. 7; 1-20, 1898-1907; @ 0086.10.
- 0086.10 *Ann. Mag. nat. Hist.*, London. # 0086.09; s. 8; 1-20, 1908-1917; @ 0086.11.
- 0086.11 *Ann. Mag. nat. Hist.*, London. # 0086.10; s. 9; 1-20, 1918-1927; @ 0086.12.
- 0086.12 *Ann. Mag. nat. Hist.*, London. # 0086.11; s. 10; 1-20, 1928-1937; @ 0086.13.
- 0086.13 *Ann. Mag. nat. Hist.*, London. # 0086.12; s. 11; 1-14, 1938-1947; @ 0086.14.
- 0086.14 *Ann. Mag. nat. Hist.*, London. # 0086.13; s. 12; 1-13, 1948-1966; @ 0086.15.
- 0061.00 *Ann. Mem. C.H.b.s. Afr. occ.*, Goree. 1916-1917; @ 0061.01.
- 0004.00 *Ann. Mus. civ. St. nat.*, Genova. 1-46, 1870-1915; @ 0004.01.
- 0004.01 *Ann. Mus. civ. St. nat.*, Genova. # 0004.00; 47, 1916+.
- 0409.00 *Ann. Mus. Hist. nat.*, Paris. 1-20, 1802-1813; @ 0409.01.
- 0048.02 *Ann. Mus. r. Afr. centr.*, Tervuren. # 0048.01; 1961+.
- 0048.00 *Ann. Mus. r. Congo Belg.*, Tervuren. 1898-1947; @ 0048.01.
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- 0411.01 *Ann. N.Y. Acad. Sci.*, New York. # 0411.00; 1, 1877+.
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- 0015.02 *Ann. Naturh. Mus.*, Wien. # 0015.01; 33, 1920+.
- 0431.00 *Ann. r. Acc. Agric.*, Torino. ...
- 0002.00 *Ann. r. Mus. zool. r. Univ.*, Napoli. 1-6, 1862-1866; @ 0002.01.
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- 0432.00 *Ann. Rev. Ent.*, ...
- 0009.00 *Ann. Serv. Epiphyt.*, Paris. 1912-1919; @ 0009.01.
- 0101.00 *Ann. Soc. Agric.*, Lyon. 1-11, 1838-1848; @ 0101.01.
- 0101.01 *Ann. Soc. Agric.*, Lyon. # 0101.00; s. 2; 1-8, 1849-1856; @ 0101.02.
- 0101.02 *Ann. Soc. Agric.*, Lyon. # 0101.01; s. 3; 1-11; 1857-1867; @ 0101.03.
- 0101.03 *Ann. Soc. Agric.*, Lyon. # 0101.02; s. 4; 1-10; 1868-1877; @ 0101.04.
- 0101.04 *Ann. Soc. Agric.*, Lyon. # 0101.03; s. 5; 1-10; 1878-1887; @ 0101.05.
- 0101.05 *Ann. Soc. Agric.*, Lyon. # 0101.04; s. 6; 1-5; 1888-1892; @ 0101.06.
- 0101.06 *Ann. Soc. Agric.*, Lyon. # 0101.05; s. 7; 1-10; 1893-1902; @ 0101.07.
- 0101.07 *Ann. Soc. Agric.*, Lyon. # 0101.06; s. 8; 1905-1922.
- 0020.00 *Ann. Soc. ent. belg.*, Bruxelles. 1-7, 1857-1863; @ 0020.01.
- 0020.01 *Ann. Soc. ent. Belg.*, Bruxelles. # 0020.00; 8-64, 1864-1924; @ 0020.02.
- 0003.00 *Ann. Soc. ent. France.* Paris. 1-11, 1832-1842; @ 0003.01.
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- 0003.02 *Ann. Soc. ent. France.* Paris. # 0003.01; s. 3; 1-8, 1853-1860; @ 0003.03.
- 0003.03 *Ann. Soc. ent. France.* Paris. # 0003.02; s. 4; 1-10, 1861-1870; @ 0003.04.
- 0003.04 *Ann. Soc. ent. France.* Paris. # 0003.03; s. 5; 1-10, 1871-1880; @ 0003.05.
- 0003.05 *Ann. Soc. ent. France.* Paris. # 0003.04; s. 6; 1-10, 1881-1890; @ 0003.06.
- 0003.06 *Ann. Soc. ent. France.* Paris. # 0003.05; 60, 1891+.
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- 0021.01 *Ann. Soc. Linn.*, Lyon. # 0021.00; s. 2; 1-80, 1852-1937.
- 0410.01 *Ann. Soc. z. b. Vanamo*, Helsinki. # 0410.00; 1-25, 1932-1963; @ 0410.02.
- 0410.00 *Ann. Soc. zool. bot. fen.*, Helsinki. 1-15, 1923-1931; @ 0410.01.
- 0025.00 *Ann. Transvaal Mus.*, Pretoria. 1, 1908+.

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 0043.00 *Annot. zool. bot.*, Bratislava. 1, 1964+.
 0293.01 *Antenna*, London. # 0293.12 ; 1, 1977+.
 0120.00 *Arb. morph. tax. Ent.*, Berlin-D. 1, 1934+.
 0096.00 *Arb. phys. angew. Ent.*, Berlin-D. 1-10, 1934-1944.
 0115.00 *Arch. Insect. Fuessly*, Zurich. 1-8, 1781-1796.
 0409.03 *Arch. Mus. Hist. nat.*, Paris. # 0409.02; 1839-1861; @ 0409.04.
 0409.05 *Arch. Mus. nat. Hist. nat.*, Paris. # 0409.04; 1935+.
 0412.01 *Arch. natural History*, London. # 0412.00; 10, 1981+.
 0093.00 *Arch. Naturg.*, Berlin. 1-77, 1835-1911; @ 0093.01.
 0093.01 *Arch. Naturg. Abt. A*, Berlin. # 0093.00; 78-92, 1912-1926; @ 0093.03.
 0093.02 *Arch. Naturg. Abt. B*, Berlin. # 0093.00; 78-89, 1912-1926; @ 0093.03.
 0093.03 *Arch. Naturg. Zeit. Zool.*, Leipzig. # 0092.01-02; 1, 1932+.
 0102.02 *Arch. Sci. phys. nat.*, Geneve. # 0102.01; 1846-1947; @ 0102.03.
 0102.00 *Arch. Sciences*, Geneve. 1796-1816; @ 0102.01.
 0102.03 *Arch. Sciences*, Geneve. # 0102.02; 1948+.
 0037.00 *Archiv. Inst. Aclim*, Almeria. 1953+.
 0087.00 *Archiv. nat. Hist.*, London. 1, 1972+.
 0005.00 *Arkiv. Zool.*, Stockholm. 1-42; 1903-1950; @ 0005.01.
 0005.01 *Arkiv. Zool.*, Stockholm. # 0005.00; s. 2; 1-23; 1951-1970; @ 0005.02.
 0035.00 *Arthropoda*, Buenos Aires. 1-4, 1947-1950.
 0032.00 *Atti Ac. naz. ital. Ent.*, Bologna. 1951+.
 0007.06 *Atti Accad. Italia*, Roma. # 0007.05; S.: 7; 1940-1944; @ 0007.07.
 0007.02 *Atti Accad. naz. Lincei*, Roma. # 0007.01; S.: 3; 1876-1884; @ 0007.03.
 0007.01 *Atti Accad. naz. Lincei*, Roma. # 0007.00; S.: 2; 1873-1877; @ 0007.02.
 0007.03 *Atti Accad. naz. Lincei*, Roma. # 0007.02; S.: 4; 1884-1892; @ 0007.04.
 0007.05 *Atti Accad. naz. Lincei*, Roma. # 0007.04; S.: 6; 1925-1939; @ 0007.06.
 0007.07 *Atti Accad. naz. Lincei*, Roma. # 0007.06; S.: 8; 1946+.
 0007.04 *Atti Accad. naz. Lincei*, Roma. # 0007.03; S.: 5; 1892-1924; @ 0007.05.
 0007.00 *Atti Accad. pont. N. Lincei*, Roma. S.: 1; 1847-1872; @ 0007.01.
 0027.02 *Atti Accad. Sci.*, Torino. # 0027.01; 1945+.
 0028.00 *Atti Mus. civ. St. nat.*, Trieste. 1, 1878+.
 0027.00 *Atti r. Accad. Sci.*, Torino. 1865-1907; @ 0027.01.
 0027.01 *Atti r. Accad. Sci.*, Torino. # 0027.00; 1908-1944; @ 0027.02.
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 0354.02 *Aus d. Natur*, Berlin. # 0354.01; 1938-1939;
 0408.01 *Aus Natur Mus.*, Frankfurt a. M. # 0408.00; 1922-1926; @ 0408.02.
 0429.00 *Aust. J. e. Agr. a. Hus.*, Northfield. 1, 1961+.
 0085.00 *Austr. Journ. agr. Res.*, Melbourne. 1, 1950+.
 0034.00 *Austr. Journ. Zool.*, Melbourne. 1953+; suppl. s. 1971+.
 0406.00 *Austral. ent. Mag.*, Greenwich. 1, 1972+.
 0323.00 *Auszug Naturw. Ver.*, Halle. 1848-1849; @ 0323.01.
 0020.02 *B. & A. Soc. ent. Belg.*, Bruxelles. # 0020.01; 65, 1925+.
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GIUSEPPE OSELLA

Dipartimento di Scienze Ambientali - L'Aquila

PAOLO BRIGNOLI: RICORDO DI UN AMICO (*)

Cari Amici e Colleghi,

siamo qui riuniti per inaugurare il XV Congresso di Entomologia, per discutere insieme problemi di grande attualità inerenti a questa nostra disciplina. Questo giorno è pertanto un giorno gioioso anche per il fatto di trovarci qui riuniti insieme per scambiarcì idee ed informazioni e discutere su nuovi e vecchi progetti. Per me, invece, esso si vela di tristezza al pensiero che l'amico carissimo Paolo Brignoli, che questo Congresso volle ed ottenne dall'Accademia Italiana di Entomologia e dalla Società Italiana di Entomologia, più non sia con noi... A me che gli fui compagno di tante ricerche sin dagli anni '60, tocca il difficile compito di delinearne la figura umana e scientifica soprattutto per coloro che non lo conobbero di persona o che con lui ebbero soltanto saltuari e superficiali contatti.

Paolo Brignoli era nato a Roma il 25 aprile 1942. Da entrambi i genitori aveva preso il gusto per i severi studi classici ed umanistici ma dalla Madre, in particolare, la facilità nell'apprendimento delle lingue. Parlava, infatti, e scriveva in francese, inglese, tedesco con la stessa facilità con la quale usava l'italiano ed il latino. Intendeva, inoltre, sufficientemente bene almeno 2 - 3 lingue. Compì gli studi classici presso la scuola dei Gesuiti a Roma (di cui serbò sempre grato ricordo) e fu durante questi anni che scoprì che la vocazione sua più vera erano gli studi naturalistici. Le sue preferenze andavano soprattutto agli Artropodi ma, cosa curiosa (com'egli stesso ebbe a confermarmi), non lo attraevano gli Insetti. Fu così, pertanto, che s'iscrisse a Scienze Naturali e si laureò con Pasquale Pasquini nel 1965 con una tesi sulle « Società Eterotipiche degli Aracnidi ». La stesura di questo lavoro lo costrinse a consultare una vasta e dispersa letteratura ed a visitare le biblioteche di molte Università e Musei italiani come Napoli, Portici, Genova, Firenze, quasi un preludio di quella che sarebbe stata la sua attività immediatamente successiva: visitare le collezioni aracnologiche dei principali Musei europei.

Nominato Assistente volontario, divenne Assistente incaricato alla Cattedra di Zoologia nel 1967 ed Assistente ordinario nel 1968; Professore incaricato di Zoologia nel 1972. Nel 1976, a soli 34 anni, vinse il concorso a cattedra per la stessa materia e fu chiamato prima a Messina poi all'Aquila. In questa nostra città diresse l'Istituto di Zoologia poi anche quello di Botanica unificati, su sua proposta, a formare l'Istituto di Scienze Ambientali, dal 1985, Dipartimento. Fu eletto due volte consecutive Preside della facoltà di Scienze.

(*) Commemorazione letta in occasione dell'inaugurazione del XV Congresso Nazionale di Entomologia (L'Aquila, 13 - 17 giugno 1988).



PAOLO BRIGNOLI - Isola Tonga, aprile 1985 (Foto M. Bologna)

Questi impegni istituzionali erano inseriti in una vasta gamma di attività che Egli svolgeva come zoologo di profonda cultura ed ampie ed anticipatrici vedute. Infatti, in vent'anni scarsi di attività scientifica Egli produsse più di 210 lavori che furono accolti da moltissime riviste italiane e straniere. Il suo campo di interessi comprendeva vari gruppi di Aracnidi (Ragni, Acari, Ricinulei, Palpigradi, Schizomidi, Opilioni, Amplipigi, ecc.). Malgrado la sua giovane età era considerato l'unico aracnologo in grado di studiare qualsiasi gruppo e di qualsiasi regione.

I temi delle sue ricerche scientifiche sono riconducibili a tre filoni principali: Sistematica (evolutiva e descrittiva), Biogeografia, Faunistica. Descrisse la morfologia delle strutture genitali di moltissimi Haplogynae sottolineandone l'importanza tassonomica e filetica. La sua attività di descrittore (il suo modello ideale fu sempre Eugène Simon) si può riassumere in queste cifre: 23 generi e 367 specie diagnosticate come nuove appartenenti a 33 famiglie diverse di Aracnidi. A questo filone si può ricondurre la ricerca di tipo bibliografico esemplificata dal supplemento al « *Katalog der Araneae* » di C.F. ROEWER nel quale egli elenca, in più di 700 pagine, oltre 7000 specie di Ragni descritti dopo il 1940.

Il filone faunistico comprende invece il maggiore numero di lavori. A esso sono dedicati circa 90 contributi relativi alla fauna paleartica, 22 a quella orientale, 5 a quella australiana, 9 a quella etiopica e 10 a quella neotropica. Il filone biogeografico, invece, è limitato all'area mediterranea.

Ha pubblicato anche un Catalogo dei Ragni cavernicoli italiani ed alcune sintesi a carattere biogeografico limitatamente alle specie cavernicole.

Ma Paolo Brignoli, oltre che studioso di laboratorio, fu anche un instancabile ricercatore di campagna. Negli anni 1965/1973 raccolse soprattutto in Italia; tra il 1966 ed il 1976, nel Vicino Oriente; tra il 1973 ed il 1976 in Africa; tra il 1979 ed il 1986 ha svolto un vasto programma di ricerche in America meridionale ma, soprattutto, in Asia sud-orientale ed in Polinesia raccogliendo un ricco ed importantissimo materiale che Egli, solo in parte, purtroppo, ha potuto studiare e valorizzare.

E' stato membro di numerose Società zoologiche ed entomologiche italiane e straniere. Al momento della morte era presidente della Société européenne d'Arachnologie e l'Accademia Italiana di Entomologia si preparava a nominarlo suo socio. Partecipò attivamente a moltissimi congressi nazionali ed internazionali tra cui, ultimissimi, quelli dell' UZI di Padova e di Pisa ove tenne applauditissime relazioni. Doveva svolgere una lunga relazione anche al Congresso internazionale di Jaca in Spagna nell'agosto 1986.

La morte lo ha sorpreso improvvisa ed inattesa a L'Aquila al termine di una intensa giornata di lavoro, la sera dell' 8 luglio 1986. Aveva da poco compiuto 44 anni.

Ma ora permettetemi un ricordo più personale che i lunghi anni di collaborazione e di affettuosa amicizia che mi legavano a lui, penso, possano giustificare.

Ci eravamo salutati la mattina del 28 giugno 1986, una calda giornata d'estate, dopo aver passato insieme la sera precedente in casa sua discutendo i problemi che avremmo affrontato insieme nell'Ateneo aquilano con il nuovo anno accademico. Prima di separarci (lui in partenza per la Germania, io per la Spagna), ci eravamo dati appuntamento in questa città per i primi di settembre. Era sereno, solo il volto pallido tradiva la stanchezza, una stanchezza enorme legata ad anni di intensissima attività didattica, scientifica ed accademica. Quando la sera del 12 luglio mi fermai in una sperduta stazione lungo l'autostrada Bilbao - Lerdida, non lontano da Calahorra, per telefonare a Verona, avevo già visitato i Pirenei Centrali ed alcuni settori dei Monti Cantabrici e m'accingevo a svolgere la seconda parte del mio programma di ricerche. Era una sera strana, fredda, ventosa e la pioggia che m'avevo lasciato alle spalle nei Paesi Baschi, minacciava di cadere anche lungo la valle dell'Ebro.

Fu l'amico Mauro Daccordi, con voce esitante, a rispondermi al telefono: « Devo darti una tristissima notizia... è morto Paolo Brignoli... i funerali sono già avvenuti... ». Rimasi senza parole. Incredibile. Impossibile. Non potevo, non volevo, non dovevo credere. Gli chiesi più volte se avessi capito bene, se era sicuro di quanto mi diceva. Ritornato in automobile, piansi sommessamente lungamente, senza vergogna. E nel silenzio della notte, sibilando il vento, nel buio rotto solo dai lampi delle rare automobili, accanto a mia moglie ed a mio figlio, rividi come in un sogno, nitidamente, i momenti felici, pieni di progetti, di idee e di speranze che mi avevano legato a Paolo nei quasi vent'anni della nostra amicizia.

Ci eravamo conosciuti a Verona nell'autunno 1967 dove Egli, insieme ad Augusto Vigna Taglianti, si era recato per studiare i materiali delle collezioni zoologiche del nostro Museo. Li aveva invitati a venire Sandro Ruffo che li aveva "scoperti" nell'Istituto di Zoologia di Roma, allora diretto dal prof. Pasquale Pasquini, dove si accingevano, appena laureati, ad intraprendere il difficile iter universitario. Io ero arrivato al Museo di Verona da poco più di un anno dopo varie peripezie che mi avevano portato, dall'Istituto di Entomologia Agraria di Torino, al Laboratorio e Osservatorio Fitopatologico, sempre di Torino, prima, alla Stazione Sperimentale per la Bachicoltura di Padova, poi. Simpatizzammo subito perché scoprimmo d'avere in comune una fortissima passione per gli studi naturalistici e sistematici e per le ricerche di campagna. Ricordo Paolo ed Augusto lavorare per ore ed ore (Ruffo li chiamava affettuosamente i « sederi di pietra ») al binoculare, in silenzio, a smistare, determinare, etichettare materiali, prendere appunti, interrompendosi di rado per accendere il toscano o a scambiarsi impressioni o novità sui materiali che stavano studiando. A mezzogiorno od alla sera ci trovavamo spesso alla mensa dei dipendenti comunali (che essi, spiritosamente, avevano soprannominato « Ristorante al Patirai ») e riprendevamo i nostri discorsi.

Ricordo ancora la mia gioia quando Paolo mi comunicò la scoperta di un nuovo *Folcide* che avevo raccolto in Spagna qualche mese prima e che poi Egli mi dedicò. Fu così che nacque l'idea di associarmi al loro programma faunistico di ricerche nel Vicino Oriente che l'Istituto di Zoologia di Roma, proprio grazie a loro, nonché ad Argano, Boitani, Cottarelli, Sbordonì, ecc., stava proprio allora rielaborando. Presi così parte a due dei viaggi da loro organizzati: quello del maggio - giugno 1969 (in Turchia) e quello del giugno - luglio 1971 (in Libano, Siria, Turchia). Fu durante queste spedizioni che ebbi occasione di conoscere Paolo anche sotto un altro aspetto: quello cioè di uomo dai vastissimi interessi culturali in campo umanistico, filosofico, storico, antropologico. Ricordo le sere, dopo lunghe giornate di faticose raccolte, passate conversando sui più svariati argomenti, spesso tratti da osservazioni casuali o da spunti di viaggio, conversazioni dalle quali traspariva non soltanto la sua impareggiabile cultura ma anche la sua arguzia e la sua visione della vita tinta di pessimismo al di là delle apparenze e degli scherzi giocosi o delle battute d'effetto.

Una sera, seduti sulle sponde del Tigri, mentre guardavamo le acque del grande fiume, improvvisamente mi domandò: « Ti ricordi di Amida e del celebre assedio del 359 d.C.? Ebbene Amida è la città che visiteremo domani ». E mi descrisse con le vivide parole di Ammiano Marcellino le vicende di quell'assedio famoso che la guarnigione romana sostenne per 73 giorni contro l'intero esercito persiano. Così quella sera, ai margini del deserto, vicino agli orticelli di zucche e di cipolle curati con amore dai contadini dei villaggi circostanti, ci (mi) sembrò di vedere le lunghe ombre dei cavalieri catafratti, degli alcieri palmireni, degli scutati sciti, dei legionari della V Macedonica e della III Gallica. E sull'onda dei ricordi, riandammo alla memoria ad altri assedi famosi tra i tanti che costellano i quasi cinque secoli di guerre ininterrotte tra Romani e Parti, tra Romani e Sassanidi: Hatra, Palmira, Duro Europo, Nisibis, Edessa, Ctesifonte... Così nelle ombre della notte ormai imminente parlammo di Gordiano III, Valeriano, Aureliano, Giuliano, Zenobia, Vaballato, Sapore, Vologase, Cosroe... Sognammo di rivedere i luoghi di Senofonte e di Alessandro ma, mescolando il sacro al profano, tornavamo spesso alla nostra missione pensando che questi luoghi, così ricchi di storia, non potevano non esserlo anche dal punto di vista naturalistico.

Infatti le storiche pietre di Hattusas, il sacro muro di Ilio, le tombe grandiose di Gordio ed Amasya o i foschi ricordi legati ai nomi di Carrhae, Maranda, Manzinkert, Dorileum, Mirienkephalon... non ci trattenevano dal raccogliere i nostri animaletti, spesso sotto lo sguardo inorridito o curioso di turisti ed indigeni. Ricordo ancora chiaramente la perplessità stampata sul volto del guardiano turco del pozzo dei sacrifici di Yazilikaya, quando, trionfante, gli mostrai tre Carabi vivi che avevo raccolto sul fondo. E Paolo che ridacchiava poco distante che mi diceva come mi erano sembrate le prigioni di Suppiluliumma III e se, per caso, volevo conoscere quelle di Ataturk.

Ricordo con chiarezza le vivacissime discussioni che Paolo aveva con Augusto (soprattutto su problemi politici e sociali) o con me (su argomenti prevalentemente storici o letterari o filosofici) che dimostravano com'Egli guardasse alla vita con lo stesso spirito di Tito Lucrezio Caro e del *De Rerum Natura*.

Dopo le esperienze mediterranee, vennero i grandi viaggi in tutto il mondo, soprattutto nelle zone tropicali dell'Asia sud-orientale. Con queste ricerche e questi viaggi Egli cercava di dar corpo ad un altro dei suoi desideri più profondi, coltivati sin dalla fanciullezza: quello di conoscere, conoscere, conoscere. Per motivi inerenti al mio lavoro, potei prendere parte a due sole spedizioni, ambedue nell'Indonesia, negli anni 1980 e 1981. Queste ricerche si inquadravano in un programma di studio ampio e ambizioso (forse superiore ai mezzi di cui disponeva) ma che dimostravano la sua capacità di pensare e di realizzare idee allora desuete in Italia e di andare contro corrente. In questa operazione Egli volle coinvolgere anche il Museo di Verona (cui era rimasto sempre molto legato) il quale avrebbe conservato gran parte dei materiali zoologici raccolti e pubblicato i risultati scientifici sul « Bolletino ». Di tali ricerche sono comparsi sino ad ora una ventina di lavori ma la sintesi biogeografica finale della regione indo-australe, vista attraverso i Ragni, purtroppo non vedrà la luce.

Ricordo ancora tutta la serie di difficoltà superate di carattere finanziario, burocratico, organizzativo che incontravamo ad ogni passo, ad ogni frontiera. Ricordo i temporali improvvisi che ci inzuppavano ma anche le soddisfazioni per i risultati conseguiti, talvolta insperati, la gioia delle scoperte più significative, le soddisfazioni nel vedere che i materiali da noi radunati erano richiesti dagli specialisti di tutto il mondo. Ma ricordo anche il suo doloroso stupore per le devastazioni alle foreste ed agli ambienti naturali anche delle isole più piccole più lontane, la difficoltà di trovare angoli di territorio in condizioni accettabili dal punto di vista naturalistico. Partito con l'idea di studiare la fauna degli ambienti primari, Paolo capovolse a poco a poco la filosofia della ricerca giungendo alla conclusione che andassero soprattutto studiati gli ambienti antropizzati che ormai costituiscono la stragrande maggioranza dei territori tropicali asiatici. E' importante conoscere — diceva — quello che è sopravvissuto alla bufera antropica e salvare quel che di significativo in esso è rimasto. Frutto di questa meditata convinzione è stata l'idea di costituire un nuovo centro interuniversitario che riunisse studiosi di Scienze pure e di Scienze applicate. Per poter collaborare a questi programmi in maniera più concreta di quanto non avrei potuto fare lavorando a Verona, accettai di concorrere alla Cattedra di Entomologia nei concorsi banditi dal Ministero nell'agosto 1984. La notizia della vittoria mia e dell'amico P.F. Ghetti mi venne comunicata da Paolo stesso il giorno successivo alla riunione conclusiva del 28 febbraio 1986. Riprendemmo così a lavorare con più lena ai programmi di Istituto mentre io mi preparavo, con rincrescimento, a lasciare il mio posto di

conservatore per la Zoologia presso il Museo di Verona che avevo tenuto per 21 anni. Consideravo (e considero tuttora) questi anni tra i migliori della mia vita, e non solo di naturalista, per gli affetti che mi legano a Sandro Ruffo, ai miei colleghi ed a tutti gli amici e collaboratori che mi hanno gratificato della loro stima e simpatia.

Ma la tua morte, Paolo, se ci ha resi più soli e più poveri, non ha però distrutto quello che Tu hai fatto ed hai realizzato. Ché il testimone caduto dalle Tue mani è già stato raccolto e la Tua opera verrà portata avanti da noi tutti.

Ma quella sera, questi pensieri, non erano presenti nella mia mente né, qualora vi fossero stati, essi avrebbero avuto sapore di conforto o di consolazione. Pensavo solo al dolore ed alle lacrime di una madre e di una moglie; pensavo solo che due bambini avrebbero atteso invano, d'ora in poi, ogni sera, il ritorno del padre con cui giocare. Pensavo solo che era morto un uomo, uno dei tanti che ogni giorno muoiono al mondo. Pensavo, quella sera, in quell'angolo sperduto di Spagna, che per me non era solo morto un uomo, ma che era morto un mondo e con lui una parte di me stesso. E mi ritornavano, ossessivamente, alla memoria i versi pieni d'angosciosa tristezza con i quali il Petrarca chiude il sonetto 269 del Canzoniere:

O nostra vita ch'è sì bella in vista
com' perde agevolmente in un matino
quel ch'n molti anni, a gran pena s'acquista!

ELENCO DELLE PUBBLICAZIONI DI PAOLO BRIGNOLI

a) Lavori scientifici

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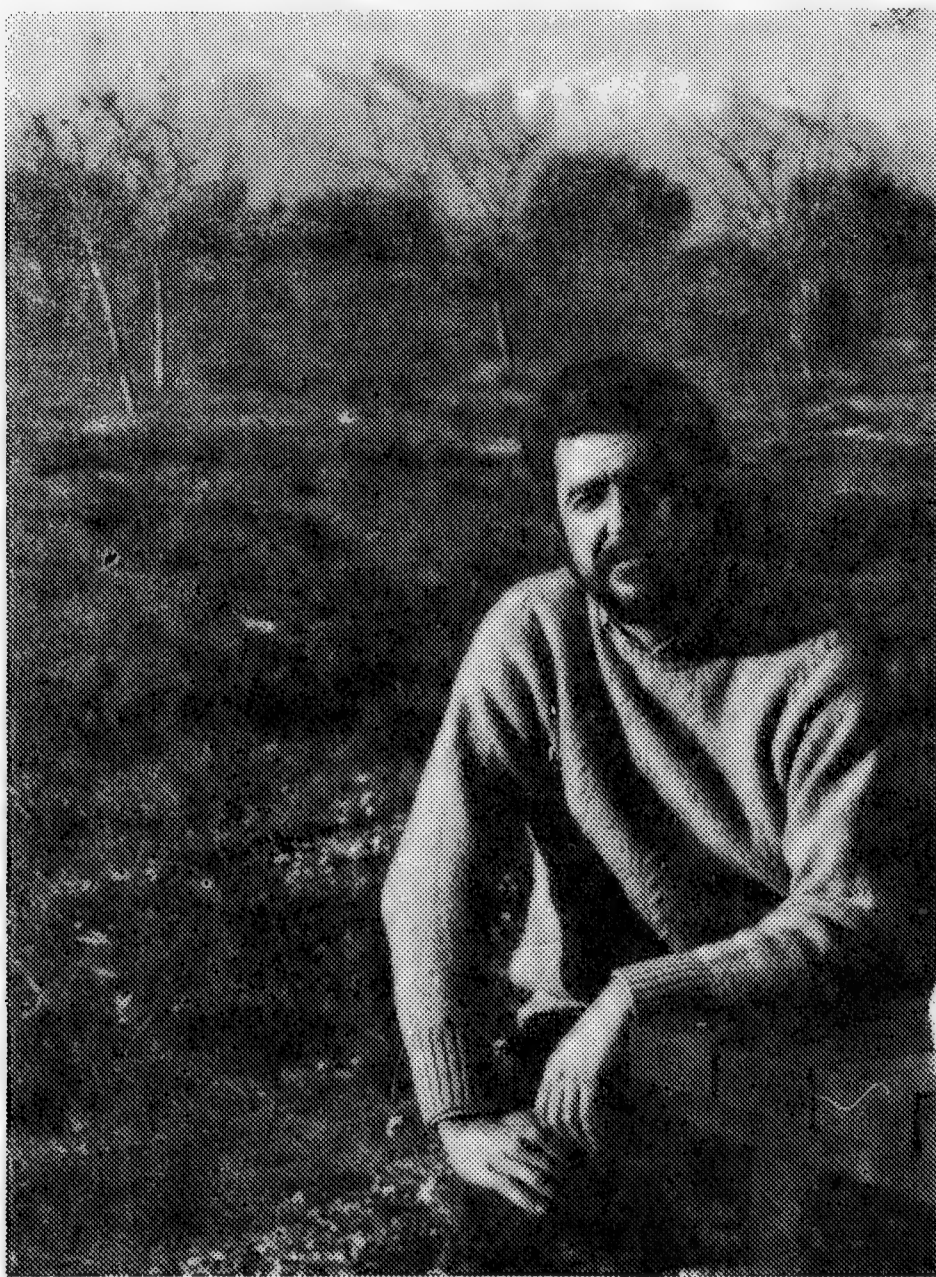
GIOVANNI GUIDO TOSO

Acqui Terme (Alessandria) 18.8.1945 - 21.8.1987

Il 21 agosto 1987 si è spento ad Acqui Terme il nostro caro amico Guido Toso, stroncato da una malattia inesorabile, lunga e purtroppo forse ancor più dolorosa. Aveva quarantadue anni appena compiuti.

Nonostante si sia dedicato a non poche attività, si può dire che la passione della sua vita sia stato lo studio delle farfalle diurne, fin da ragazzo e poi sempre. Dapprima raccoglitore amatoriale, come spesso accade agli entomologi, venne poi ad iscriversi all'Università di Genova dove studiò Scienze Naturali e dove subito iniziò una proficua attività di ricerca. Le sue indagini riguardarono inizialmente la fauna del Ponente ligure - piemontese, ma si estesero ben presto ad altri campi, portandolo a compiere un'ampia analisi dell'ecologia dei Ropaloceri italiani. Nell'ambito di tali studi ebbe occasione di descrivere due nuove specie di Licenidi, di cui una della Val d'Aosta e l'altra del Monte Pollino. Questa, fra le altre, fu forse una delle ragioni che lo spinsero ad intraprendere una revisione mondiale dei Licenidi Polyommatus, su cui iniziò a lavorare nel 1978. I suoi interessi, dapprima soprattutto faunistici, si indirizzarono così verso quegli studi analitici di dettaglio che ben presto lo resero uno dei migliori morfologi dei Ropaloceri a livello europeo. Ciò gli valse l'incarico di collaborare alla stesura della Fauna d'Italia (Lepidotteri ropaloceri) e poi alla prestigiosa serie « Butterflies of Europe » (AULA Verlag).

Guido, come tutti lo chiamavano, era una persona umanamente squisita: timido, modesto, riservato e taciturno, ma di una grandissima generosità e sempre disponibile per tutti. Era una di quelle persone, purtroppo estremamente rare, a cui nessuno può mancare di volere bene, forse perché era proprio lui per primo a voler bene a tutti.



Il suo stesso matrimonio con Maria - Jacinta Humedas, fu vissuto con grande riserbo. Ella gli fu sempre vicina in ogni campagna di ricerca, dalle Alpi, dove insieme trovarono il primo nuovo *Agrodiaetus*, alla Spagna e ovunque, senza mai stancarsi di dormire per terra magari sotto un pino, quando la ricerca lo richiedeva, ma anzi sempre fornendogli appoggio ed incoraggiamento.

Guido era socio della Società Entomologica Italiana fino dal 1968 e della Societas Europaea Lepidopterologica dal 1978 ed aveva amicizie e corrispondenza con moltissimi ricercatori europei ed americani.

Tutti loro, come noi, sentono ora acutamente la sua mancanza.

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GIUSEPPE GENTILINI

THE UPPER MIOCENE DRAGONFLIES OF MONTE CASTELLARO
(MARCHE, CENTRAL ITALY)

(*Odonata Libellulidae*)

INTRODUCTION

Several fossil *Odonata* occurring in association with leaves and fishes, have been discovered in the Upper Miocene deposit of Monte Castellaro (Marche, Central Italy), in the last fifteen years. The material is housed in the Museo del Territorio of Riccione (Emilia - Romagna, Northern Italy) and comprises ninety-eight single wings of adult *Anisoptera*, three wings of *Zygoptera*, seven abdomens and a large collection of fossil plants and fish remains. The condition of these dragonflies is so good that the wings of some specimens show patterns of original colouring. However, when the collector separates the fine-grained marly laminae, the gypsum recrystallization can damage the delicate reticulation of the wing, so the specimens must be dried quickly in a hot oven.

In the present report an account on fossil insects and flora of the Monte Castellaro biotope is given and representatives of the family *Libellulidae* are discussed, while other genera and families will be treated in future studies. The analysis of the fossil dragonflies is based chiefly on forewing remains, even if several hindwings, probably belonging to the new species described, have been discovered. Unfortunately all hindwing remains are separated from forewings, except one in poor condition, therefore it is impossible to relate them correctly.

INSECT FAUNA AND FLORA

More than 90 percent of adult insects from the Monte Castellaro deposit, have been discovered in a single layer, called "Strato degli insetti", included in the unit "Marne bituminose", of Lower Messinian age. A geological setting and a list of insect orders have been reported in a previous paper (GENTILINI, 1984). However, several specimens and a new order (*Plecoptera*), have been found in the last few years and new percentages can be listed, as follows: *Diptera* (47.7%); *Hymenoptera* (14%); *Hemiptera* (13.1%); *Odonata* (11.9%); *Coleoptera* (6.4%); *Neuroptera* (2.2%); *Isoptera* (1.4%); *Lepidoptera* (1.3%); *Orthoptera* (1.1%); *Dermaptera*, *Trichoptera*, *Mecoptera* and *Plecoptera* (0.1%). The fossil entomofauna is dominated by *Diptera Mycetophiloidea*, 36 percent of *Diptera*, and *Tipuloidea*, 25 percent, while the families *Syrphidae*, *Muscidae* and *Bibionidae* are less numerous. *Odonata Libellulidae*, 45 percent of dragonflies, and *Aeshnidae*, 20 percent, are well represented by several wing remains. The finding of single wings might be due to the transport and separation of parts of the body by a stream of water as well as by the destruction of the insects during burial (ROHDENDORF, 1964).

Homoptera Aphididae, Hymenoptera and Coleoptera are very frequent in the insect assemblages, while Lepidoptera are rare and of special interest. In fact in Italy only three species of fossil butterflies have been reported from the Upper Miocene of Gabbro (Central Italy) by REBEL (1898), and two forewing remains have been figured from the Messinian of Piedmont (Northern Italy) by CAVALLO & GALLETTI (1987).

According to WILSON (1982), the distance from shore or water depth might explain the different percentages in the composition of the insect assemblages. In near-shore situations beds are scarcely laminated and fauna is varied but generally poorly preserved with abundance, for example, of Homoptera and Diptera Bibionidae. In off-shore situations layers are well laminated and insect assemblages are generally rich in complete specimens with dominance of Diptera and Hymenoptera; plants remains are rare and small leaves predominate. Therefore the Upper Miocene fauna from the "Strato degli insetti" has several characteristics of off-shore deposition, Bibionidae being 5 percent of all Diptera and Diptera-Hymenoptera about 61 percent of the whole insect fauna. Moreover small and light leaf and fish impressions are often found in this layer, which consists of hundreds of very thin laminae.

Among fossil insect assemblages, forms indicating temperate climate, are represented by the finding of the genus *Trichocera* (Diptera, Trichoceridae), probably the extinct genus *Miopsiloptera* (Diptera Limoniidae) and genera *Symptetrum* and *Libellula* (Odonata Libellulidae). However, some insects with tropical or subtropical affinities are present in the entomofauna investigated, such as genera *Plecia* (Diptera, Bibionidae), partly *Geranomyia* (Diptera Limoniidae), *Tramea*, and perhaps the new genus *Pisaurum* (Odonata Libellulidae). Fairly temperate conditions are suggested also by the majority of the fossil plants discovered in the unit "Marne bituminose": 340 of these leaf impressions coming from the "Strato degli insetti" are listed below.

TABLE 1.

Family - Genus	No. of specimens	Percentage
GIMNOSPERMAE		
<i>Pinus</i>	71	20.8
<i>Sequoia</i>	48	14.1
Cupressaceae	30	8.8
<i>Taxodium</i>	27	7.9
<i>Thuja</i>	26	7.6
<i>Libocedrus</i>	4	1.1
<i>Callitris</i>	1	0.2
Unidentified forms	10	2.9
ANGIOSPERMAE		
<i>Quercus</i>	14	4.1
Lauraceae	13	3.8
Graminaceae	10	2.9
<i>Cinnamomum</i>	5	1.4
Tamaricaceae	4	1.1
<i>Acer</i>	2	0.5
<i>Populus</i>	1	0.2
Unidentified forms	74	21.7

An examination of these data allows us some preliminary remarks. The floral assemblages are dominated by Gymnospermae (63.8%), while the number of Angiospermae (36.1%) decreases considerably (hydrophyle Graminaceae (52.4%) and *Quercus* (15.7%) instead are the dominant elements of the flora in the underlying layers). This "vegetational change" might be due to a cooling of climate related to the "salinity crisis" in the Mediterranean, as suggested also by palynological investigations on Late Messinian sediments in the Tyrrhenian Sea, carried out by BERTOLANI MARCHETTI & CITA (1975).

We can summarize the main plant communities and habitats of the Monte Castellaro biotope during the deposition of the "Strato degli insetti", as follows.

Xerophyle forests of *Pinus*, *Sequoia*, *Thuja* and *Libocedrus*, are probably well developed on hills or mountain slopes with temperate or relatively cool temperate climate. However, in some places these conifers seem lowered towards the sedimentary basin, considering the abundance and good preservation of the specimens and the lack of a prolonged transport. The forest border is characterized by the occurrence of scrubs of *Callitris*, while an evergreen belt of Lauraceae (*Cinnamomum*) is spread in highlands and coastal plains with a humid and warm temperate climate. Forests of *Taxodium* are found in swamps along the borders of the basin with fresh, nearly fresh to slightly brackish and muddy habitats and temperate, warm temperate and humid climate. Moreover it is probable that marshes and lagoons are present in the biotope beyond this vegetational belt, with a slightly greater depth of the water and a higher average salinity.

Hydrophyle Graminaceae and deciduous *Quercus* occur rarely among fossil assemblages of the "Strato degli insetti" and this might indicate a strong regression of the reed zone and oak forest related to the environmental conditions. The finding of heliophyle Tamaricaceae is significant and might suggest the presence of a marine coastal environment with sandy beach.

The Gymnospermae of the Monte Castellaro deposit show affinities with coniferous forests living at present in western and eastern areas of North America. Particularly the abundance of *Sequoia* suggests similarities to mountain temperate forests of the Sierra Nevada and humid coastal forests of California and Southern Oregon with *Squoiadendron giganteum* and *Sequoia sempervirens*. In fact the two fossil species from Monte Castellaro, *S. langsdorfii* and *S. sternbergi*, seem to be identical to these recent species.

The genus *Pinus* is now living in coastal swamps or in lowlands as well as on mountain slopes, so it is very difficult to interpret paleoenvironmental conditions without identification of fossil remains at the species level. On the other hand the occurrence of *Taxodium* indicates generally shady, shallow, swampy conditions and fresh water habitats probably like those existing at the present day in Louisiana or in Florida. According to PENFOUND & HATHAWAY (1938: 34) in the marshlands of Southeastern Louisiana « *the transition from 0.4 percent to 0.6 percent in the average salinity of the soil water, is responsible for the elimination of the cypress-gum swamp* » (*Taxodium* - *Nyssa* associates). Therefore we might suppose lower salinity percentages and an average depth of some inches in the Monte Castellaro swamps, where the genus *Taxodium* is relatively well developed.

The genus *Cinnamomum* is now spread in tropical - subtropical Australian and Asian regions, because of the Neozoic glacial events and indicates warm temperate and humid climate.

Examining the significance of these fossil associations we must conclude that the flora and entomofauna of the layer investigated, are made up predominantly of temperate genera now living in Nearctic and Palaearctic regions. This fact might suggest a cooling phase as effect of the Messinian "salinity crisis" in connection with the probable desiccation of the Mediterranean Sea (RYAN, 1973). The occurrence of genera with tropical or subtropical affinities, developed in the warm-humid and less exposed areas of the biotope, may so be explained as partly relict fauna and flora, related to the Upper Miocene climatic deterioration.

The ichthyofauna of the "Strato degli insetti" is represented nearly exclusively by *Aphanius crassicaudus* Agassiz and rare *Lates* sp. The former is a strongly euryhaline genus; the latter suggests warm temperate conditions and at the present day is found both in African lakes and in normal marine environment.

WING VENATION OF ODONATA

Fossil dragonflies are known from Paleozoic, Mesozoic and Neozoic deposits, while about five thousand recent species have been described up to the present. However, the students of the order Odonata have discussed a long time on the interpretation of odonatan wing venation and several nomenclatural systems have been prosed. An interesting review of existing schemes was given by CARLE (1982); of these I record only the most widely followed system of TILLYARD & FRASER (1938 - 1940), in which the vein media posterior (MP —) and cubitus anterior (CuA +), are considered missing and Odonata and Ephemeroptera treated as unrelated. Recently RIEK & KUKALOVÁ-PECK (1984) have reinterpreted Odonata wing venation in a careful study on well preserved wings of Paleozoic dragonflies from Argentina. They assume that in modern dragonflies, all veins are homologous to other pterygote orders and no vein is missing. The costal margin is composed of the veins PC, CA, CP and ScA, fused basally in the costal triangle and distally of PC, C and Sc. The vein R is formed by two radial stems, RA and RP as in Paleodictyoptera and Ephemeroptera, while M is considered as fused with Cu and a portion of CuA, near the base, as in Paleozoic Ephemeroptera. Therefore Odonatoidea and Ephemeroidea are interpreted as sister groups. I follow this last interpretation of the odonatan wing venation, in my opinion the most correct among a lot of veinal systems in which the veins have often been misinterpreted.

The TILLYARD & FRASER system is listed below for comparison.

TABLE 2. — Terminology of Odonata wing venation

	RIEK & KUKALOVÁ - PECK (1984)		TILLYARD & FRASER (1938-40)	
Precosta	PC	±	—	
Costa	C	+	C	+
Costa anterior	CA	+	—	
Costa posterior	CP	—	—	
Subcosta	Sc	+	—	
Subcosta anterior	ScA	+	—	
Subcosta posterior	ScP	—	Sc	—
Radius anterior	RA	+	R ₁	+
Radius posterior	RP	—	R _s	—
Radius posterior 1	RP ₁	—	R ₂	—
First radial intercalary	IR ₁	+	IR ₂	+
First radial intercalary a	IR _{1a}	+	—	
Radius posterior 2	RP ₂	—	R ₃	—
Second radial intercalary	IR ₂	+	IR ₃	+
Radial supplement	Rspl	—	Rspl	—
Radius posterior 3-4	RP ₃₋₄	—	R ₄₊₅	—
Media	M	—	—	
Media anterior	MA	+	MA	+
Media posterior	MP	—	CuP	—
Medial supplement	Mspl	—	Mspl	—
Cubitus	Cu	—	—	
Cubitus anterior	CuA	+	A ₁	+
Cubitus posterior	CuP	—	—	
Anal	A	+	A	+
Anal anterior	AA	+	—	
Anal posterior	AP	±	—	
OTHER FEATURES				
Costal triangle	Ct			
Antenodal crossveins	Ans			
Nodus	N			
Subnodus	Sn			
Postnodal crossveins	Pns			
Pterostigma	Pt			
Arculus	Arc			
Cu crossing	Cuc			
Triangle	T			
Supratriangle	Spt			
Subtriangle	St			
Paranal cells	Pc			
Anal loop	Al			
Discoidal field	Df			
Bridge crossveins	B			
Oblique vein	O			

SYSTEMATIC DESCRIPTION

Order	Odonata
Suborder	Anisoptera
Superfamily	Libelluloidea
Family	Libelluloidae
Subfamily	Sympetrinae
Genus	<i>Sympetrum</i> Newmann, 1833

Sympetrum italicum n. sp.

Derivatio nominis — This species is named after the latin adjective "italicum": Italian.

Material — Seven forewings of adult specimens.

Repository — Museo del Territorio of Riccione, Emilia-Romagna (Northern Italy).

Holotype — No. 170 (part). M.T.R. Left forewing well preserved.

Paratypes — No. 1208: left forewing; part and counterpart. No. 177: right forewing; part. No. 1209: right forewing; part. No. 167: right forewing; part. No. 179: right forewing; counterpart. No. 163: right forewing; part and counterpart.

Type locality — Monte Castellaro, Marche (Central Italy).

Age — Upper Miocene (Lower Messinian). Level: "Strato degli insetti"; unit: "Marne bituminose".

Diagnosis — Size small; antenodal crossveins all aligned to one another, excluding the last, incomplete. Forewing triangle fairly narrow and elongate with a single crossvein. Discoidal field not much wide. Pterostigma short and dilated. Rspl very concave.

Description — Wing hyaline, broad, rather short. Reticulation relatively close and apex rounded and broad. Costal triangle with upper side slightly curved. Antenodal crossveins 7/6; postnodal crossveins 6/4. Nodus situated midway between apex and base of wing. Pterostigma yellow brown with upper and lower margins dark brown to black and ends parallel. One crossvein situated below it, near the middle. Three single cells between PC, C, SC and RA. behind Pt. Arculus between the first and second antenodals; sectors of arculus fused at their origin. Cu crossing lying above the fourth paranal cell. Four crossveins between RA and RP before subnodus. Costal side of triangle about 1/3 as long as proximal side. Supratriangle free; subtriangle with three cells. Seven paranal cells with the first three narrow and elongate. CuA subtending thirteen single cells. Eleven cells between AP, AA, CuP and proximal portion of CuA. Discoidal field rather short, contracted distally and including thirty-seven cells. MP separated from posterior wing margin by a maximum of three rows of cells. A row of fiveteen simple cells between RP, RP₃₋₄ and MA. Rspl deeply concave and subtending six cells. Three single cells and one double distally, between Rspl and IR₂; four rows of cells between Rspl and posterior wing margin. Area between IR₂ and RP₃₋₄ including fifty-six cells. RP₂ well undulate. Ten single cells between RP₂ and IR₂ distal to oblique vein. IR₁ arising close to the second postnodal, between RA and RP₁, and subtending four single cells and one double, before Pt. Origin of IR_{1a} under proximal end of Pterostigma. Area between RP₁ and RP₂ including forty-nine cells. RA separated from RP₁, by nine cells: about four and a half cells before Pt.

Number of marginal cells between RA and RP₁: one; RP₁ and IR₁: five; IR₁ and RP₂: four; RP₂ and IR₂: two; IR₂ and Rspl: two; Rspl and RP₃₋₄: twelve; RP₃₋₄ and MA: one; MA and Mspl: one; Mspl and MP: two; MP and CuA: one; CuA and base of wing: twenty-five. The whole wing comprises two hundred and sixty-nine cells.

Measurements — Forewing length 24.4 mm; width 7.8 mm at nodus. Distance from base of wings to nodus, 12.2 mm. Distance from nodus to apex, 12.4 mm. Pterostigma: length 2.1 mm; width 0.95 mm. Triangle: costal side 0.95 mm; proximal side 2.75 mm; distal side 3.3 mm.

Comparison — *Sympetrum italicum* differs from all known species of the genus especially in the short and broad forewing, the very narrow and elongate triangle, the deeply concave Rspl and well undulate RP₂. Moreover it is differentiated from the other two species of *Sympetrum* described in this paper, in the shape and size of the wing and triangle, in the reticulation more or less dense and the position of the nodus situated near the middle of the distance between apex and base of wing.

TABLE 3. — Comparison of the variability of the left and right forewings in seven adult specimens of *Sympetrum italicum* n. sp.

	<i>Holotype</i>		<i>Paratypes</i>				
No.	170	1208	177	1209	167	179	163
Forewing characters:	Left	Left	Right	Right	Right	Right	Right
Wing: length	24.4	24.6	24.7	24.6	17	22	20
width at nodus	7.8	7.7	8.2	7.7	7.7	7	7.9
Apex fairly (+) or weakly (—) rounded	+	+	+	+	+	+	+
Pterostigma: length	2.1	1.85	1.9	2.75	1.9	1.9	2
width	0.95	0.82	0.9	0.9	0.85	0.7	0.9
Triangle: length	3.3	3.1	3.4	2.9	—	2.85	3.1
width	0.95	1.1	1	1	—	1	1
Antenodal crossveins	7/6	7/6	7/6	7/6	3/2	7/6	7/6
Postnodal crossveins	6/4	6/4	6/4	6/4	6/4	6/4	6/4
Accessory crossveins to the bridge:							
present (+); absent (—)	—	—	—	—	—	—	—
Paranal cells	7	6	7	7	—	6	7
Discoidal field cells	37	40	39	36	39	41	37
MA and MP fairly (+) or poorly (—) converging distally		+	+	+	+	+	+
Cells between RP ₁ , RP ₃₋₄ and MA	15	14	12	14	11	13	13
Rspl deeply (+) or poorly (—) concave	+	+	+	+	+	+	+
Cells between Rspl and posterior wing margin	4	4	4	4	4	4	4
Cells between arched Rspl and IR ₂	6	6	6	6	6	6	6
RP ₂ well (+) or poorly (—) undulate	+	+	+	+	+	+	+
Cells between RP ₂ and IR ₂ distal to O	12	13	11	12	13	11	13
Cells between RP ₁ and IR ₁ before Pt	6	4	5	5	4	6	5

Remarks — Two left and five right forewings of *Sympetrum italicum*, has been compared on the basis of twenty characters of wing venation. It is important to note that the intraspecific variation of this fossil population, is limited to slight differences in the length and width of forewings, in the size of pterostigma and triangle, the number of discoidal field cells (from 36 to 41), the number of wing cells between RP, RP₃₋₄ and MA (from 11 to 15); RP₂ and IR₂ distal to oblique vein (from 11 to 13); RP₁ and IR₁ (from 4 to 6). There are no other noticeable difference between holotype and paratypes, as well as between the two left forewings and the five right, examined separately. According to YABLOKOV, EATIN & PRITIKINA (1970), the analysis of populational variability of dragonfly wing venation is important to solve interspecies systematics and microevolutionary problems; however, this aspect has been little studied both in extant and fossil Odonata.

The Messinian *Sympetrum* of Monte Castellaro show very few characters with probable primitive states (plesiomorphic). They concern the shape of the wing relatively broad and Rspl short and running very concave to IR₂. Most of characteristics are so apomorphic features. In fact according to FRASER (1957), arculus situated between the first and second antenodals, the distal antenodal incomplete, the narrow triangle in forewing with costal side fairly short, Mspl and Rspl well developed and the lack of accessory crossveins to the bridge, suggest the venation is essentially recent.

Sympetrum krzeminski n. sp.

Derivatio nominis — This species is dedicated to Dr. W. Krzeminski of Kraków, student of recent and fossil Tipuloidea.

Material — One forewing of adult specimen.

Repository — Museo del Territorio of Riccione, Emilia-Romagna (Northern Italy).

Holotype — No. 180 (part); 180 a (counterpart). M.T.R. Right forewing fairly well preserved, excluding the apex, missing in the part, but in good condition in the counterpart.

Type locality — Monte Castellaro, Marche (Central Italy).

Age — Upper Miocene (Lower Messinian). Level: "Strato degli insetti"; unit: "Marne bituminose".

Diagnosis — Size medium. Antenodal crossveins all aligned excluding the distal antenodal, incomplete. Forewing with crossvein network dense. Triangle perpendicular to cubitoanal margin and two celled. Supratriangle free. Discoidal field contracted distally. Pt brown, moderately broad and elongate with ends parallel and upper and lower margins black. Rspl deeply concave.

Description — Right forewing hyaline, moderately long and broad and densely reticulated towards the apex and posterior wing margin. Costal triangle with a short emargination on the upper side. Antenodal crossveins 7/6; postnodal crossveins 6/4. Nodus situated before half way along the costa. Pterostigma about three and a half times longer than wide; three single cells behind it between PC, C, SC and RA; one and a half cells below it. Arculus situated between the 1st and 2nd antenodals, slightly nearer to the first. Sectors of arculus fused for a short distance at their origin. Five crossveins between RA and RP before subnodus.

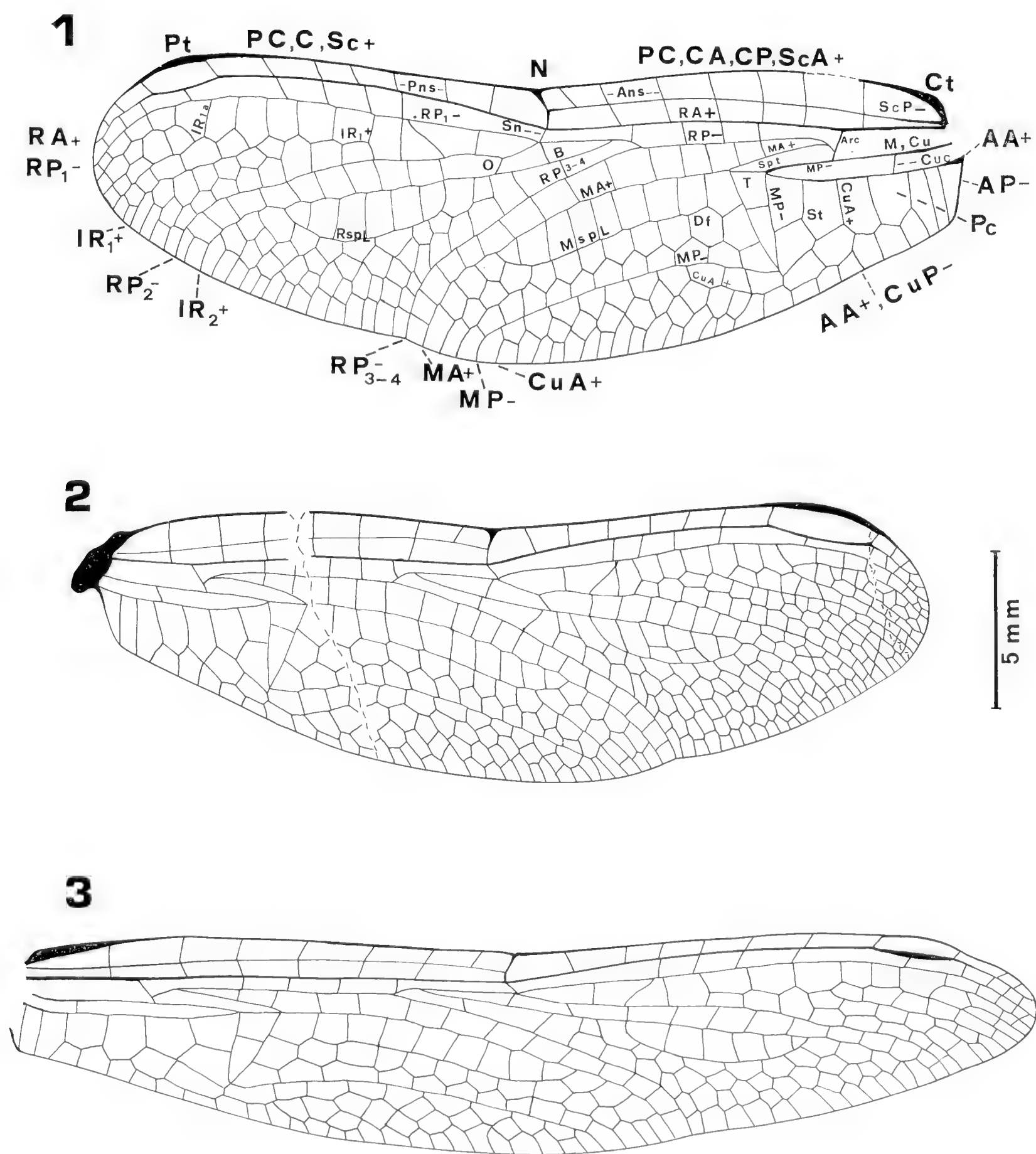


Fig. 1 - *Sympetrum italicum* n. sp. - Holotype - Left forewing. — Fig. 2 - *Sympetrum krzeminskii* n. sp. - Holotype - Right forewing. — Fig. 3 - *Sympetrum elongatum* n. sp. - Holotype - Left forewing (counterpart).

Triangle with costal margin short; proximal and distal sides almost equal in length and more than twice costal side. Position of triangle fairly perpendicular to lower margin of wing. Subtriangle narrow, elongate towards cubito-anal margin and with three single cells. One Cu crossing situated near the middle of the distance between arculus and base of wing. Seven paranal cells: the last four moderately narrow and elongate. CuA subtending fifteen single cells. Discoidal field with three rows of cells: the whole area includes forty-nine cells. A single row of five cells between Mspl and MA, distally. MP separated from posterior margin by a maximum of four rows of cells. Eighteen single cells between RP, RP₃₋₄ and MA. No supplementary crossveins to the bridge. Rspl running very concave to IR₂ and subtending eight cells: the median cells are double. IR₂ weakly zigzagged in its median portion. Six cells distally between Rspl and IR₂ and five rows of cells between Rspl and posterior wing margin. The whole area IR₂, RP₃₋₄ comprises seventy-three cells. RP₂ moderately undulate; eight single cells between RP₂ and IR₂ distal to oblique vein. Second crossvein between RP₁ and RP₂ sinuous and followed distally by two single cells. IR₁ subtending a row of four single cells and one double, before pterostigma. Origin of IR_{1a} under proximal fourth of Pt. Area between RP₁ and RP₂ including ninety-three cells. RA separated from RP₁ by twelve cells: four and a half cells situated before Pt.

Number of marginal cells between RA and RP₁: two; RP₁ and IR₁: five; IR₁ and RP₂: six; RP₂ and IR₂: four; IR₂ and Rspl: one; Rspl and RP₃₋₄: fourteen; RP₃₋₄ and MA: one; MA and Mspl: one; Mspl and MP: four; MP and CuA: one; CuA and base of wing: twenty-six. The whole wing comprises three hundred and seventy-two cells.

Measurements — Forewing length 27 mm; width 8 mm at nodus. Distance from base of wing to nodus, 12.8 mm; distance from nodus to apex, 13.8 mm. Pterostigma: length 3.45 mm; width 0.95 mm. Triangle: costal side 1.25 mm; proximal side 2.7 mm; distal side 2.85 mm.

Comparison — *Sympetrum krzeminskii* differs from extant species of the genus, in the anteroapical portion of the wing, broad and rounded, the shape of subtriangle and paranal cells, the deeply concave Rspl and double cells between IR₂ and Rspl. The last two characters occur in *S. pedemontanum* and *S. uniforme* (Palearctic species); however, these dragonflies are readily differentiated by the most part of the other characteristics of the wing venation.

S. krzeminskii is quite distinct from *S. italicum* and *S. elongatum* discussed in this paper, in the shape of the wing, triangle, subtriangle, number of cells and crossvein network dense. Primitive character states seem limited to the broad and rounded apex of the wing and very concave Rspl.

Sympetrum elongatum n. sp.

Derivatio nominis — The species is named after the strong elongation of the forewing.

Material — Seven forewings of adult specimens.

Repository — Museo del Territorio of Riccione, Emilia-Romagna (Northern Italy).

Holotype — No. 166 (counterpart). M.T.R. Left forewing well preserved.

Paratypes — No. 172: left forewing; counterpart. No. 1210: left forewing; part and counterpart. No. 178: left forewing; part. No. 174: left forewing; part and counterpart. No. 162: left forewing; part and counterpart. No. 171: right forewing; part.

Type locality — Monte Castellaro, Marche (Central Italy).

Age — Upper Miocene (Lower Messinian). Level: "Strato degli insetti"; unit: "Marne bituminose".

Diagnosis — Size medium; forewing long and slender. Distal antenodal incomplete. Triangle broad at the base and oblique in position towards cubito-anal margin. Subtriangle elongate proximally. Paranal cells fairly wide. Discoidal field narrow and elongate.

Description — Wing hyaline, narrow, elongate and not much densely reticulated. Apex fairly pointed. Costal triangle relatively long. Antenodal crossveins 7/6; postnodal crossveins 6/4. Nodus situated far out from the arculus, at about half the distance between base and apex of the wing. Pterostigma narrow, moderately elongate and four times longer than wide. One oblique crossvein below Pt, near the middle, and three single cells behind it. Arculus between the first and second antenodals; sectors of arculus fused at their origin. Four crossveins between RA and RP before subnodus. Triangle two celled; costal side about one half as long as distal side and less than 2/3 proximal side. Supratriangle free; subtriangle elongate towards the base of the wing and including three cells. Seven paranal cells rather short and broad. Cu crossing situated far from the base of triangle and near the proximal end of the fourth paranal cells. CuA subtending twelve single cells. Discoidal field with three rows of cells and including in all thirty-seven cells. Four single cells distally between MA and Mspl. A row of fourteen single cells between RP, RP₃₋₄ and MA. Rspl moderately arched and subtending six simple cells. A maximum of four rows of cells between Rspl and posterior wing margin. Four single cells distally between Rspl and IR₂. Area between IR₂ and RP₃₋₄ including forty-nine cells. RP₂ moderately undulate; nine single cells between RP₂ and IR₂ distal to oblique vein. IR₁ subtending three single cells and one double, before pterostigma. Origin of IR_{1a} about under middle of Pt. Area between RP₁ and RP₂ including forty-six cells. RA separated from RP₁ by ten cells: about four and a half cells before Pt.

Number of marginal cells between RA and RP₁: one; RP₁ and IR₁: four; IR₁ and RP₂: four; RP₂ and IR₂: two; IR₂ and Rspl: one; Rspl and RP₃₋₄: ten; RP₃₋₄ and MA: one; MA and Mspl: one; Mspl and MP: three; MP and CuA: one; CuA and base of wing: twenty-six. The whole wing comprises two hundred and sixty cells.

Measurements — Forewing length 29.8 mm; width 5.5 mm at nodus. Distance from base of wing to nodus, 14.4 mm; distance from nodus to apex, 15.5 mm. Pterostigma: length 2.4 mm; width 0.6 mm. Triangle: costal side 1.2 mm; proximal side 2.15 mm; distal side 2.5 mm.

Comparison — *Sympetrum elongatum* n. sp. differs from fossil and recent species of the genus, especially in the shape of the forewing very narrow and elongate, the pointed apex, the shape of subtriangle and the paranal cells relatively broad distally.

TABLE 4. — Comparison of the variability of the left and right forewings in seven adult specimens of *Sympetrum elongatum*

	Holotype			Paratypes			
No.	166	172	1210	178	174	162	171
Forewing characters:	Left	Left	Left	Left	Left	Left	Right
Wing: length	29.8	30.05	26.8	24.7	20	26	26.9
width at nodus	5.5	5.7	5.8	6.1	6.1	5.5	6.1
Apex fairly (+) or weakly (—) narrow and pointed	+	+	+	+	+	+	+
Pterostigma: length	2.4	2.2	2.1	1.9	1.9	1.9	1.9
width	0.6	0.5	0.5	0.6	0.6	0.6	0.6
Triangle length	2.5	2.1	2.7	2.3	—	2.1	2.4
width	1.2	1.4	1.1	1.1	—	1.1	1
Antenodal crossveins	7/6	7/6	7/6	7/6	—	7/6	7/6
Postnodal crossveins	6/4	6/4	6/4	6/4	—	6/4	6/4
Accessory crossveins to the bridge: present (+); absent (—)	—	—	—	—	—	—	—
Paranal cells	7	4	6	7	—	7	7
Discoidal field cells	37	39	37	35	28	30	36
MA and MP fairly (+) or poorly converging distally	+	+	+	+	+	+	+
Cells between RP, RP ₃₋₄ and MA	14	16	14	14	10	12	13
Rspl deeply (+) or moderately concave (—)	—	—	+	—	—	—	—
Cells between Rspl and posterior wing margin	4	4	4	4	4	4	4
Cells between arched Rspl and IR ₂	6	6	6	6	6	6	6
RP ₂ well (+) or poorly undulate (—)	+	+	+	+	+	+	+
Cells between RP ₂ and IR ₂ distal to O	12	14	13	13	13	12	12
Cells between RP ₁ and IR ₁ before Pt	4	4	4	4	6	5	5.5

Remarks — The forewing venation of seven adult specimens of *S. elongatum* has been compared on the basis of twenty characters as in *S. italicum*. Examining the significance of these data we can see that the intraspecific variation concerns chiefly the length and width of the wing, the pterostigma and triangle. There are slightly differences, partly due to poorly preservation of characters, in the number of discoidal field cells (from 28 to 39), of cells situated between RP, RP₃₋₄ and MA (from 10 to 16); RP₂ and IR₂ distal to oblique vein (from 12 to 14); RP₁ and IR₁ before Pt (from 4 to 6). No significant difference occurs between left and right forewings as regards other characters of wing venation.

Characteristics with primitive states are found in the forewing triangle relatively broad at the base and perhaps in the apex very narrow and pointed. while general features of wing venation much resemble the recent species of *Sympetrum*

TABLE 5. — Forewing characteristics of the Monte Castellaro *Sympetrum* occurring in twenty Palaeartic species

	Fossil species	Recent species
— Pt short and dilated	<i>S. italicum</i>	<i>S. danae</i> , <i>S. infuscatum</i> ,
— Pt long and wide	<i>S. krzeminskii</i>	<i>S. eroticum</i> , <i>S. infuscatum</i> ,
		<i>S. risi</i> , <i>S. vulgatum</i>
— Pt moderately long and narrow	<i>S. elongatum</i>	<i>S. cordulegaster</i> , <i>S. tibiale</i>
— Apex fairly broad and rounded	<i>S. italicum</i>	<i>S. pedemontanum</i> , <i>S. parvulum</i> ,
— Apex very narrow and pointed	<i>S. krzeminskii</i>	<i>S. frequens</i>
— Ans 7/6; Pns 6/4	<i>S. elongatum</i>	—
	<i>S. italicum</i>	<i>S. eroticum</i> , <i>S. flaveolum</i> ,
	<i>S. krzeminskii</i>	<i>S. fonscolombeii</i> , <i>S. cordulegaster</i> ,
	<i>S. elongatum</i>	<i>S. tibiale</i>
— Seven paranal cells	<i>S. italicum</i>	<i>S. baccha</i> , <i>S. fonscolombeii</i> ,
	<i>S. krzeminskii</i>	<i>S. parvulum</i> , <i>S. Risi</i> , <i>S. frequens</i> ,
	<i>S. elongatum</i>	<i>S. depressiusculum</i> , <i>S. tibiale</i>
		<i>S. danae</i> , <i>S. vulgatum</i> ,
		<i>S. croceolum</i> , <i>S. striolatum</i> ,
		<i>S. decoloratum</i> , <i>S. sanguineum</i>
— Df with thirty-seven cells	<i>S. italicum</i>	<i>S. vulgatum</i> , <i>S. decoloratum</i>
— Df with forty-nine cells	<i>S. elongatum</i>	
— Rspl subtending six cells	<i>S. krzeminskii</i>	—
	<i>S. italicum</i>	<i>S. eroticum</i> , <i>S. baccha</i> ,
	<i>S. elongatum</i>	<i>S. fonscolombeii</i> , <i>S. cordulegaster</i> ,
		<i>S. parvulum</i> , <i>S. vulgatum</i> ,
		<i>S. decoloratum</i>
— Rspl subtending single and double cells	<i>S. krzeminskii</i>	<i>S. pedemontanum</i> , <i>S. uniforme</i>
— Rspl deeply concave	<i>S. italicum</i>	—
	<i>S. krzeminskii</i>	
— Four rows of cells between Rspl and posterior wing margin	<i>S. italicum</i>	<i>S. baccha</i> , <i>S. flaveolum</i> ,
	<i>S. elongatum</i>	<i>S. risi</i> , <i>S. danae</i> ,
		<i>S. striolatum</i> , <i>S. meridionale</i>

Remarks — Fourteen significant forewing characters of fossil *S. italicum*, *S. krzeminskii* and *S. elongatum* have been compared with those of twenty recent species of *Sympetrum* living in different habitats, in order to analyze similarities and differences.

The species of extant *Sympetrum* listed above with the highest number of characters (four), in common with *S. italicum* are *S. sanguineum*, *S. parvulum*, *S. fonscolombeii* and *S. decoloratum*, while a single feature occurs in *S. pedemontanum*. These species differ from the holotype in the shape of the wing and triangle, in wing colouring and details of the venation.

Three characters in common with *S. krzeminskii* occur in *S. risi*, but this species is well differentiated by having apex of both fore and hindwings coloured. A single feature occurs in *S. infuscatum*, *S. depressiusculum*, *S. croceolum*, *S. decoloratum*, *S. sanguineum*, *S. uniforme* and *S. meridionale*.

Four characters in common with *S. elongatum*, occur in *S. tibiale* and *S. fonscolombeii*; however, these species differ especially in the shape and size of the wing and subtriangle and in details of the wing venation.

A single character in common with the three fossil species of *Sympetrum*, occurs in *S. flaveolum*, *S. risi*, *S. frequens*, *S. depressiusculum*, *S. danae*, *S. croceolum* and *S. striolatum*. The presence of seven paranal cells is the feature occurring in the highest number of recent Palaearctic species (thirteen).

Most of the forewing characteristics of the Messinian *Sympetrum* discussed here, are apomorphic features and the genus has shown little evolutionary advance since Miocene times.

A complete hindwing and part of two forewings of fossil *Sympetrum* have been reported by CAVALLO & GALLETTI (1987) from the Upper Miocene of Piedmont (Northern Italy), while a new species has been described by NEL & PAPAIZIAN (1985) from the French Oligocene deposit of Aix - en Provence. All these species are closely allied to recent representatives.

At the present day the genus *Sympetrum* is widespread in the Palaearctic and Nearctic regions with two species extend to South Africa and one to South India (FRASER, 1957). In Europe the genus is represented by ten species, while according to BELYSHEV & HARITONOV (1977), the species of the USSR fauna are twenty-one: of these nineteen occur in Siberian regions (BELYSHEV, 1973).

Adult *Sympetrum* are poor flyers and predominate especially in autumn. Most of them are found in stagnant waters, but some species occur in current water and in brackish habitats and other are common in woods, marshes and meadows.

Subfamily
Genus

Libellulinae
Libellula Linnaeus, 1758

***Libellula mediterranea* n. sp.**

Derivatio nominis — The species is named after the Mediterranean Sea.

Material — One forewing of adult specimen.

Repository — Museo del Territorio of Riccione, Emilia - Romagna (Northern Italy).

Holotype — No. 168 (part); 168 a (counterpart). M.T.R. Right forewing well preserved.

Type locality — Monte Castellaro, Marche (Central Italy).

Age — Upper Miocene (Lower Messinian). Level: "Strato degli insetti"; unit: "Marne bituminose".

Diagnosis — Species medium-sized. Base of forewing coloured. Antenodal complex showing a high specialization: antenodal crossvein in strict alignment; distal antenodal complete. Sectors of arculus separated from their origin. Accessory crossveins to the bridge present. Triangle three celled. Mspl and Rspl well developed and subtending single cells. RP₂ well undulate.

Description — Right forewing with a reddish brown coloration on proximal area between ScP, RA, RP, MA and MP; on base of triangle and paranal cells, distally; on area between M, Cu, MP, and AA, CuA. Reticulation fairly dense. Costal triangle relatively long. Antenodal crossveins 17/17: the most distal one between costal margin and ScP, fairly oblique. Postnodal crossveins 11/8. Nodus situated slightly beyond the middle of the wing. Pterostigma brown, moderately elongate, about three and a half times longer than wide and subtending two and two half cells. Ends of Pt almost parallel; five single cells behind it. Fourteen intermedian crossveins between RA and RP before subnodus. Arculus between the 1st and 2nd antenodals, but slightly nearer to the second. Sectors of arculus separated at their origin and curved downwards. One Cu crossing lying above

the fourth paranal cell. Supratriangle with one crossvein near the proximal tip of costal side of triangle. Subtriangle trapezoidal in shape and including five single cells. Triangle narrow, elongate, oblique in position and with three cells separated by two parallel crossveins. Costal side of triangle more than $1/2$ as long as proximal side and more than $1/3$ distal side. Eight paranal cells relatively narrow and elongate. Area between CuA and MP including nine cells. Vein MP well arched and CuA strongly curved downwards in its distal portion. Discoidal field with three cell rows but beginning with four cells: the whole area includes seventy-two cells. One row of cells between MA and Mspl and six single cells distally towards the lower margin of the wing. MP separated from posterior border by a maximum of four rows of cells. Twenty-six single cells and one double between RP, RP_{3-4} and MA. Four supplementary crossveins to the bridge. Rspl nearly straight and subtending eleven single cells; however, the seventh cell shows a small portion of crossvein. Six cells distally between Rspl and IR_2 and about four rows of cells between Rspl and posterior wing margin. The whole area IR_2 , RP_{3-4} includes eighty-six cells. RP_2 sinuous and well undulate. Fourteen single cells and four double between RP_2 and IR_2 distal to oblique vein. IR_{1a} subtending a row of six simple cells and two double, before Pt. IR_{1a} arising under proximal fourth of pterostigma. Area between RP_1 and RP_2 including seventy-nine cells. RA separated from RP_1 by seventeen single cells: eight and a half cells are before Pt.

Number of marginal cells between RA and RP_1 : one; RP_1 and IR_1 : four; IR_1 and RP_2 : five; RP_2 and IR_2 : two; IR_2 and Rspl: one; Rspl and RP_{3-4} : thirteen; RP_{3-4} and MA: one; MA and Mspl: one; Mspl and MP: seven; MP and CuA: five; CuA and base of wing: twenty-one. The whole wing comprises four hundred and sixty-one cells.

Measurements — Forewing length 30.06 mm; width 8.4 mm at nodus. Distance between base of wing and nodus, 15.4 mm; distance from nodus to apex, 14.7 mm. Pterostigma: length 3.12 mm; width 0.9 mm. Triangle: costal side 1.25 mm; proximal side 2.7 mm; distal side 3.3 mm.

Remarks — The new species *Libellula mediterranea* partly resembles *L. relict*a in the shape of AP, the first paranal cell very broad and the sectors of arculus separated at origin, but it is entirely different in the other characters of the wing venation. *L. mediterranea* shows both apomorphic and plesiomorphic features: arculus situated between the first and second basal antenodals; costal side of triangle much shorter than the other two; Mspl and Rspl well developed (apomorphic); distal antenodal complete; sectors of arculus separated at origin; accessory crossvein to the bridge, present (plesiomorphic).

A lot of specimens belonging to the genus *Libellula* have been recorded in the literature, however, most of the determinations are questionable and a careful re-examination of the types is needed.

At the present day the genus *Libellula* is widespread in Palaearctic and Nearctic regions; in Western Europe it is represented by three species (*L. depressa*, *L. fulva*, *L. quadrimaculata*), while *L. relict*a occur in the USSR fauna. Fifteen species are found in Nearctic region.

Adult of *Libellula* are found in stagnant or slow flowing water as well as on mountain, in lowlands, forests and woods (D'AGUILAR, DOMMANGET & PRÉCHAC, 1986).

Subfamily

Pantaliinae

Genus

Tramea Hagen, 1861

***Tramea miocenica* n. sp.**

Derivatio nominis — This species is named after the word "Miocene", an epoch of the Tertiary period.

Material — One forewing of adult specimen.

Repository — Museo del Territorio of Riccione, Emilia - Romagna (Northern Italy).

Holotype — No. 176 (part); 176 a (counterpart). M.T.R. Left forewing fairly well preserved.

Type locality — Monte Castellaro, Marche (Central Italy).

Age — Upper Miocene (Lower Messinian). Level: "Strato degli insetti"; unit: "Marne bituminose".

Diagnosis — Wing large-sized, elongate, pointed at apex and with a very close reticulation. Last antenodal crossvein discontinuous. Pterostigma small and trapezoidal in shape; ends of Pt not parallel; five single cells behind it. Triangle two crossed. Subtriangle not well distinct proximally. Mspl and Rspl well developed. Three rows of cells between Rspl and IR₂; RP₂ straight in proximal and median portion.

Description — Left forewing hyaline, uncoloured, fairly elongate and pointed at apex. Lower margin of wing sinuous. Crossvein network dense. Antenodal crossveins 12/11; postnodal crossveins 9/8. Nodus situated before the middle of the wing. Subnodus very oblique with RP₂ originating below its end. Pterostigma narrow, relatively short and about five times longer than wide. Three crossveins below Pt. Nine intermedian crossveins before subnodus. Arculus between the first and second antenodals. Sectors of arculus fused at origin. Supratriangle free. Cu crossing above the fourth paranal cell. Triangle narrow, elongate, with three cells and proximal and distal sides equal in length. Costal side about three times shorter than the other two. Eight single cells in subtriangle. Ten paranal cells very different in shape and size. Twenty-four single cells between CuA and MP. Discoidal field with four cell rows, but beginning with five cells. Mspl subtending two cell rows. The whole area of the discoidal field comprises ninety-six cells. MP separated from posterior wing margin by a maximum of about four cell rows. Twenty-four cells between RP, RP₃₋₄ and MA. No supplementary crossvein to the bridge. Rspl well arched and subtending twenty-three cells: three of these are single cells, four are double and four triple cells. Seven cells between Rspl and IR₂ distally, and seven cell rows between Rspl and posterior wing margin. RP₂ smoothly curved; IR₁ broadly concave and subtending seven single cells and five triple, before Pt. Origin of IR_{1a} near the middle of Pt. Eighteen single cells between RA and RP₁: about nine cells situated before pterostigma.

Number of marginal cells between RA and RP₁: two; (area between RP₁ and RP₂ poorly preserved) RP₂ and IR₂: one; IR₂ and Rspl: one; Rspl and RP₃₋₄: sixteen; RP₃₋₄ and MA: one; MA and Mspl: one; Mspl and MP: six; MP and CuA: one; CuA and base of wing: twenty-seven (part).

Measurements — Forewing length 45 mm; width 9.3 mm at nodus. Distance between base of wing and nodus, 21.1 mm; distance from nodus to apex, 23.7 mm. Pterostigma: length 3.6 mm; width 0.7 mm. Triangle: costal side 1 mm; proximal side 3.3 mm; distal side 3.3 mm.

Remarks — *Tramea miocenica* differs from all recent species of the genus, in the shape of subtriangle and position of triangle; moreover in the rows of cells between Rspl and IR₂, IR₁ and RP₁, and Rspl and posterior wing margin. The arrangement of cell rows between IR₁ and RP₁ resembles partly the genus *Pseudotranea*.

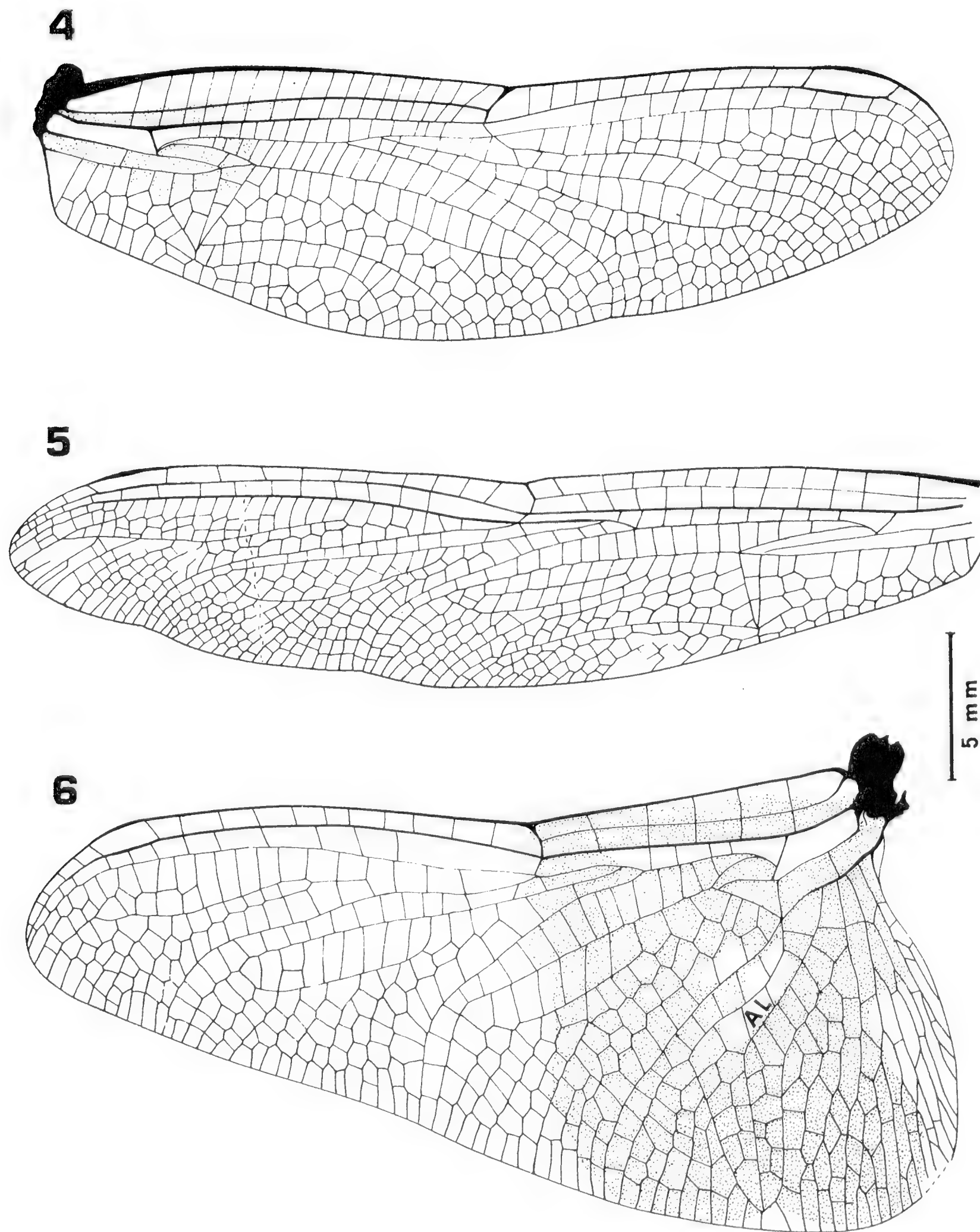


Fig. 4 - *Libellula mediterranea* n. sp. - Holotype - Right forewing. — Fig. 5 - *Tramea mioceni-ca* n. sp. - Holotype - Left forewing. — Fig. 6 - *Pisaurum coloratum* n. gen. n. sp. - Holotype - Right hindwing (counterpart).

In *T. miocenica* plesiomorphic features are absent and the vention is essentially recent. According to FRASER (1957: 121) the wing venation of the subfamily Pantaliinae « *has attained its highest level of evolution* » and fossil evidence suggests that a noticeable venational specialization is present since the Neogene period.

The genus *Tramea* is unknown as fossil up to the present, so far as the writer's knowledge is concerned, while two new genera of Pantaliinae have been reported from the French Oligocene by NEL & PAPAŽIAN (1985) and from the Early Miocene of Germany by ZEUNER (1938).

At the present day *Tramea* is widespread throughout the tropics and neotropics, and is absent from Western Europe. However, one species occurs in the USSR fauna (*T. abdominalis*), while two species are found in Australia and seven species in North America. Other species live in African and Asian regions. According to WESTFALL (1978) *Tramea* lives in lentic-littoral habitats (silt, detritus, vascular hydrophyte, macroalgae). Some species as *T. carolina* and *T. lacerata* are frequent both in fresh and saline marshes of the Central Gulf Coast of North America (WRIGHT, 1943).

Subfamily	Pantaliinae
Genus	Pisaurum n. gen.
Type of genus	<i>Pisaurum coloratum</i> n. sp.

Derivatio nominis — This genus is named after the Latin name of Pesaro (Pisaurum), town close to the Monte Castellaro deposit.

Diagnosis — Hindwing of medium-large size, triangular in shape and with base greatly broadened. A pronounced brown, reddish brown colouring extends to nodus, anal loop and CuP - AA area. Reticulation close. Antenodal crossveins 5/5. Pterostigma relatively small and inconspicuous. Arculus situated between the first and second antenodals but very close to the first. Sectors of arculus fused at their origin. One Cu crossing. Base of triangle lying proximal to the level of the arculus. Triangle and subtriangle without crossveins. Anal loop elongate and stocking-shaped. Discoidal field well developed with four cell rows at the base and a maximum of nine cell rows distally. Mspl and Rspl well developed and subtending single cells: a double cell only between Rspl and IR₂. Vein RP₂ fairly well undulate and IR₂ almost straight. Oblique vein lying near to subnodus.

Remarks — The characteristics of the hindwing venation of the genus *Pisaurum*, have been compared with those of genera belonging to the subfamily Pantaliinae. The new genus resembles partly *Pantala*, *Tramea* and *Hydrobasileus* in the general shape of the wing, but it is well differentiated by having a very broad cubito-anal space, a brown, reddish brown coloration on the first half of the wing, a narrow and elongate anal loop and significant differences in the wing venation. Moreover *Pisaurum* has the vein RP₂ undulate and IR₂ straight as in the genus *Antidytthemis*, however, it is quite distinct in the shape of the wing and most of the venational characters. On the other hand it is partly similar to *Tauriphila*, *Miathyria* and *Idiataphe* in the number of antenodal crossveins and in having a single row of cells between MA and Mspl, and IR₂ and Rspl. However, it differs from these genera especially in the shape of the anal loop and the veins RP₂ and IR₂, and in the colouring.

Pisaurum coloratum n. sp.

Derivatio nominis — This species is named after the hindwing coloration.

Material — One hindwing of adult specimen.

Repository — Museo del Territorio of Riccione, Emilia-Romagna (Northern Italy).

Holotype — No. 186 (counterpart). M.T.R. Right hindwing in good condition and presumable with original colour preserved.

Type locality — Monte Castellaro, Marche (Central Italy).

Age — Upper Miocene (Lower Messinian). Level: "Strato degli insetti"; unit "Marne bituminose".

Diagnosis — Triangle and subtriangle one celled. Discoidal field beginning with four cells. Other characters as in the genus.

Description — Hindwing fairly broad basally, triangular in shape and tapering to a relatively pointed apex. A brown, reddish brown colouring extends to midlength of wing, covering nodus, subnodus, most of anal field and anal loop. Only very few cells between RA and M-Cu and some cells of anal loop, are without coloration. Crossvein network dense. One Cu crossing situated at about midlength between proximal side of triangle and base of wing. Antenodal crossveins 5/5; postnodal crossveins 10/6. Pterostigma small, inconspicuous, brown, dark brown, and about three times longer than wide. Two and one quarter cells below Pt and five simple crossveins behind it. Arculus between the first and second antenodals; sectors of arculus with a relatively long fusion. Base of triangle lying slightly but distinctly proximal to level of arculus; costal side moderately arched distally and proximal side about twice distal side. Cubito-anal field broadened and filled with several cell rows, narrow and elongate. Five paranal cells. Anal loop elongate with a well developed toe and made up of two rows of simple cells in the first half. Midrib fairly angulated in median portion then straight and almost perpendicular to CuP and AA margin. Inner and outer sides of anal loop not zigzagged distally; heel extends beyond distal end of triangle. The whole area of the anal loop comprises thirty-one cells. CuA separated from MP by twelve cells. Four cell rows at the base of the discoidal field. One cell row between MA and Mspl: this last vein runs fairly zigzagged distally. Discoidal field widely divergent at the wing margin and including eighty-three cells. MA and RP₃₋₄ strongly angulated towards the distal ends; a row of nineteen single cells between RP, RP₃₋₄ and MA. No supplementary crossveins to the bridge. Rspl running concave to IR₂ and subtending eight simple cells and one double. IR₂ slightly zigzagged distally. Two single cells and three double, between Rspl and IR₂ towards posterior wing margin. The whole area between RP₃₋₄ and IR₂ comprises eighty cells. RP₂ well sinuous and undulate. Sixteen single cells and one double, between RP₂ and IR₂ distal to O. Oblique vein situated near to subnodus. IR₁ subtending seven single cells and two double, before Pt; origin of IR_{1a} under middle third of Pterostigma. The whole area between RP₂ and RP₁ includes seventy-eight cells. RA separated from RP₁ by fourteen single cells: about seven cells before Pt.

Number of marginal cells between RA and RP₁: one; RP₁ and IR₁: two; IR₁ and RP₂: nine; RP₂ and IR₂: two; IR₂ and Rspl: two; Rspl and RP₃₋₄: fourteen; RP₃₋₄ and MA: one; MA and Mspl: one; Mspl and MP: eleven; MP and CuA: one; CuA and base of wing: thirty-five. The whole wing comprises four hundred and seventy-seven cells.

Measurements — Hindwing length 33 mm; width 13.2 mm at nodus. Distance between base of wing and nodus, 12.4 mm; distance from nodus to apex, 18.9 mm. Pterostigma: length 2.4 mm; width 0.85 mm. Triangle: costal side 2.5 mm; proximal side 1.45 mm; distal side 2.8 mm.

Comparison — The new species *Pisaurum coloratum* differs from all recent species of Pantaliinae chiefly in the general shape of the hindwing, the colouring, the shape of triangle, anal loop, Rspl, RP₂ and IR₂.

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RIASSUNTO

Le libellule del Miocene superiore di Monte Castellaro (Marche, Italia Centrale) (Odonata Libellulidae).

Vengono esaminati gli insetti e la flora del Miocene superiore di Monte Castellaro (Marche, Italia Centrale) e discussi alcuni sistemi di nomenclatura delle ali degli odonati. Inoltre sono descritte ed illustrate sei nuove specie e un nuovo genere di libellule fossili appartenenti alla famiglia Libellulidae, con osservazioni sulla variabilità della venulazione dei *Sympetrum* messiniani: *Sympetrum italicum* n. sp., *Sympetrum krzeminskii* n. sp., *Sympetrum elongatum* n. sp. (Sottofamiglia Sympetrinae); *Libellula mediterranea* n. sp. (Sottofamiglia Libellulinae); *Tramea miocenica* n. sp., *Pisaurum coloratum* n. gen. n. sp. (Sottofamiglia Pantaliinae).

ABSTRACT

The insect fauna and flora of the Upper Miocene of Monte Castellaro (Marche, Central Italy) and some nomenclatural systems of wing veins of Odonata, have been examined. Moreover six new species and a new genus of Odonata Libellulidae have been described and figured with an account on the variability of wing venation of the Messinian *Sympetrum*. Types: *Sympetrum italicum* n. sp., *Sympetrum krzeminskii* n. sp., *Sympetrum elongatum* n. sp. (Subfamily Sympetrinae); *Libellula mediterranea* n. sp. (Subfamily Libellulinae); *Tramea miocenica* n. sp., *Pisaurum coloratum* n. gen. n. sp. (Subfamily Pantaliinae).

CHRISTIAN SIEGEL

CONTRIBUTO ALLA CONOSCENZA DELLA LEPIDOTTEROFAUNA
DELLA SARDEGNA. 1. NOCTUIDAE RACCOLTE DAL 1981 AL 1986

(*Lepidoptera*)

INTRODUZIONE

Si propone in questa nota il resoconto dei rilevamenti lepidotterologici fatti dall'Autore in Sardegna: viene qui pubblicata la lista dei Nottuidi con intenzione di far seguire con ulteriori contributi le osservazioni fatte sulle altre Famiglie.

Il numero complessivo dei Nottuidi registrati (12.275) è inferiore alla realtà, perché di alcuni gruppi numericamente molto rilevanti, come ad es. le specie dei Generi *Euthales*, *Paradrina*, *Sablia*, è stato raccolto solo un campionario che non rispecchia la reale abbondanza degli individui. In qualche altro caso come ad es. nell'*Apopestes spectrum* (101 individui) soltanto 1 esemplare è stato catturato allo stato adulto, mentre il resto proviene dall'allevamento delle abbondanti larve rinvenute. Ciononostante l'elaborazione numerica dà un quadro abbastanza realistico della distribuzione e frequenza annua delle sottofamiglie e delle specie (Tab. 1) e così pare raggiunto lo scopo. Occorre anche precisare che questo elenco è valido solo per le basse quote (0 - 300 m s.l.m.), le poche catture fatte a quote altimetriche superiori non incidono in modo significativo sul contenuto delle tabelle.

L'esposizione viene fatta attraverso due tabelle di cui la seconda con annotazioni in calce.

Nella prima si dà resoconto della distribuzione delle sottofamiglie nell'arco dell'anno e nella seconda l'elenco delle specie in ordine sistematico con indicazione del numero degli individui raccolti nelle tre decadi mensili dell'anno. Per la sistematica e la nomenclatura delle Hadeninae e Cuculliinae viene seguito BERIO in *Fauna d'Italia: Noctuidae. I*, con aggiunta di varie comunicazioni personali; per le altre sottofamiglie vengono seguiti i testi correnti. La quasi totalità del materiale è stata esaminata dallo stesso Berio che desidero ringraziare vivamente per i continui aiuti e collaborazione.

Qui di seguito vengono riportati dati sulle località di cattura:

Sinis: Penisola semidesertica a nord del Golfo di Oristano. Tipico ambiente di costa sabbiosa caratterizzato da dune fossili con residui di dune eoliche, delimitato ad est dallo stagno di Cabras ed altri minori. Si riscontrano 3 tipi di ambiente: a) dall'immediato retrospiaggia più o meno esteso con dune di bassa vegetazione annuale, con breve ma intensa fioritura primaverile (*Lotus*, *Silene*, *Coronilla*, *Pancratium*, *Hathiola*, *Euphorbia*, ecc.); b) dune fossili con macchia mediterranea bassa (*Rosmonius*, *Pistacia*, *Tamarix*, ecc.); c) cornice degli stagni, ve-

getazioni di palude con letti di *Juncus acutus* ed altri, quali *Salix*, *Tamarix*, *Populus*.

S. Giovanni in Sinis: ambiente di dune del tipo a). Tun'e'Seu: passaggio dall'ambiente a) all'ambiente b). Cabras: ambiente del tipo c). Torre Grande: lido di Oristano all'interno del Golfo di Oristano con passaggio di residui dall'ambiente a) all'ambiente c).

Tutta la zona del Sinis ha subito nell'ultimo decennio un intenso sviluppo agrario, dando ottimi risultati (riso, grano, verdure) per cui gran parte del territorio non presenta più l'ambiente originale. Con l'aggiunta del turismo balneare in via di sviluppo, che notoriamente interessa i lembi incontaminati, vi è ragione di temere un rapido degrado ambientale e si auspica un maggior interesse da parte delle Autorità e Istituzioni per un'approfondita indagine dell'entomofauna e della flora del Sinis per identificare le parti più caratteristiche da conservare.

S'Archittu: località balneare a Nord della vasta distesa di due eoliche di Is. Arenas (ora coperta da una duna artificiale). Ad Est del massiccio del Monte Ferru, si presenta come ambiente collinoso con singoli alberi residui del bosco originale delle pendici a macchia mediterranea.

Oristano Centro Città: dai rilevamenti risulta una fauna per la massima parte migratoria con qualche reperto assai interessante proveniente da cortili e alberi dei viali e piazze (*Quercus ilex*, *Ulmus*, *Populus*, ecc.).

Fiume Tirso: tipico ambiente fluviale con diverse specie di *Salix*, oltre a *Populus*, *Ulmus*, *Tamarix*, singoli esemplari di *Quercus*, nonché canneti; il fiume attraversa la pianura intensamente coltivata compresa la golena stessa per cui si considera soltanto l'ambiente di sponda.

Monte Ferru: salendo le pendici dell'antico vulcano (oltre 1000 m) a Nord di Oristano da Seneghe (ca. 400 m) si riscontrano vari ambienti: pascoli con isolate piante di *Quercus ilex* e *suber*; oliveti circondati da querce, *Celtis*, *Sambucus*, sugherete; bosco di *Quercus ilex*, in parte antico con piante di notevoli dimensioni. Vaste aree di boschi sono degradate in seguito a diversi incendi che hanno devastato la zona.

Monte Arci: antico vulcano di oltre 800 m ad Est della pianura oristanese (Campidano alto) con residui di bosco di *Q. ilex* e folta macchia mediterranea. Anche qui gli incendi hanno fatto danni incalcolabili probabilmente irreparabili.

Barrali: piccolo centro sul Fiume Mannu al margine Sud della regione trentina, a carattere spoglio stepposo, noto per le stesse coltivazioni di grano. Per l'ambiente del fiume si veda Fiume Tirso.

Ussana: distante una decina di km a Sud di Barrali sul fiume Mannu.

Dolianova: a una ventina di km a Nord di Cagliari ai piedi del complesso montuoso del Monte Serpeddi come la località seguente. Sulle spoglie pendici scarsissimi residui del bosco di leccio.

Soleminis: principale località di raccolta nelle vicinanze di Dolianova. Contrariamente a tutte le località sopracitate, che sono state visitate occasionalmente, a Soleminis sono stati effettuati prelievi durante tutto l'arco dell'anno. Ambiente collinoso, arido a ridosso del M. Cirronis (rilievo secondario del gruppo Serpeddi) con pendici in parte spoglie, in parte coperte solo di pineta artificiale con scarsi residui del bosco di *Quercus ilex* oltre a una ricca macchia mediterranea con varie specie di *Cistus*, *Pistacia lentiscus*, *Arbutus unedo*, *Erica arborea*, *Calycoto-*

TABELLA 1 – Distribuzione annua delle sottofamiglie (numero individui - numero specie)

SOTTOFAMIGLIE	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Totale indiv.	Totale specie
NOCTUINÆ	29 - 4	80- 4	53- 5	365- 8	760-10	391-13	179-17	210-17	737-20	427-22	87-11	62- 3	3380	28
MELICLEPTINÆ				5- 2	11- 2	8- 2	8- 2	4- 2	34- 3	8- 1	17- 1	10- 1	105	3
HADENINÆ	2- 1	8- 3	16- 6	555-20	648-25	174-14	142- 7	116- 8	289- 13	41- 8	7- 2	5- 2	2003	31
CUCULLINÆ	40- 7	139- 6	14- 5	33-11	26-53	3-31	1- 1	1- 1	32- 7	437-16	663-18	162-12	1547	35
AMPHIPYRYNÆ			5-11	145-11	576-16	281-17	151-13	135-11	330-15	211-13	11- 5	5- 1	1850	29
ACRONICTINÆ			3- 1	25- 2	67- 3	17- 2	16- 2	7- 1	46- 2	3- 1			184	3
BRYOPHILINÆ					1- 1	33- 3	231- 5	205- 6	46- 4	3- 2			519	6
EUTELIINÆ					70- 1	51- 1	2- 1	6- 1	11- 1				140	1
SARROTHRIPINÆ		1- 1			1- 1		4- 2						6	3
STICTOPTERINÆ				3- 1	85- 1	20- 1	22- 1	22- 1	37- 1	20- 1			209	1
ACONTINÆ					21- 1	55- 8	147- 9	140-10	118-10	31- 4	3- 2		515	11
CHLÖEPHORINÆ					10-11	48- 1	15- 1	5- 1	11- 1	2- 1			91	1
PLUSIINÆ	1- 1	4- 1	9- 1	36- 4	48- 6	43- 3	24- 3	40- 3	74- 4	12- 4	16- 2	4- 1	311	7
CATOCALINÆ				68- 2	63- 4	148- 9	366- 9	59- 7	47- 8	3- 3	1- 1		755	12
OPHIDERINÆ		2- 1	2- 2	12- 4	186- 7	130- 8	73- 5	50- 5	82- 3	2- 2			539	9
HYPENINÆ	3- 1			3- 3	33- 4	42- 2	1- 1	3- 2	6- 3	25- 3	5- 3		121	8
TOTALI	75- 14	229-16	103-24	1250-68	2606-93	1444-87	1382-73	1006-76	1900-76	1225-81	810-45	249-20	12.275	188

me spinosa, *Anagynis phoetida*, *Rhamnus alakernus* (?), *Juniperus*, *Myrtus communis*, *Lonicera smilax*, vari *Asparagus*, *Quercus* (*ilex*, *coccifera*, *sulus*), *Lavandula stoechas*, *Ferula*, *Asphodelus microcarpus*, vari *Cardi*, ecc.

Orgosolo: località della Sardegna Centrale (un solo reperto).

METODI DI RACCOLTA

1. *Lume*: sono state utilizzate le più svariate fonti di luce, soprattutto tubi fluorescenti del tipo Wood e superattinico occasionalmente applicati ad una lampada luminosa.

2. *Esche*: materia assorbente inzuppata di melate di varia consistenza appesa sui rami ad altezza d'uomo. Ispezione del fogliame di *Ficus carica* infestato da Acari curati da formiche per le loro secrezioni zuccherose. Il potere attrattivo su Noctuidi supera talvolta le più collaudate melate.

3. *Stadi preimmaginali*: ricerca delle uova e larve, queste ultime, dove possibile, battendo rami e cespugli per farle cadere nel telo appositamente steso; infine, crisalidi occasionalmente rinvenute.

Per arrecare il minor danno possibile, la trappola luminosa non è stata caricata di veleni, quindi al mattino buona parte del materiale raccolto, in particolare femmine, veniva rimessa in libertà; lo stesso dicasi per gli esemplari provenienti dagli allevamenti.

Nella seconda tavola è riportata una colonna per ogni mese dell'anno. Ogni colonna è divisa in tre decadi e i numeri indicano gli esemplari catturati per ogni decade.

Note alla Tabella 2:

1. *A. obelisca*: un solo esemplare del 26/8/82 appartiene alla ssp. (f?) *corsicola* Corti.
2. *segnilis*: nuova per la Sardegna.
3. *bastifera*: nuova per la Sardegna.
4. *trux*: insieme alla forma tipica sono presenti le ff. *rubrofusca* Schaw., *virgata* Tutt, *nigra* Tutt, *soffusa* Tutt, *lunigera* Steph., *rufescens* Tutt, *pallida* Tutt, *olivina* Stgr., con numerose forme di passaggio.
5. *endogaea*: endemismo prettamente alofilo dell'immediato retrospiaggia di cui si segnala la forma fortemente schiarita, quasi bianca con disegni rosa pallido, descritta di S. Giovanni in Sinis, denominata *alexandrae* Berio, 1986.
6. *puta*: insieme alla forma tipica sono presenti e ff. *radius* Haw, *renitens* Hb., *debilis* Berio, *subtusfasciata* Byt-Slz., *nigra* Tutt, *obscurina* Berio.
7. *predotai*: descritta da BYTINSKI-SALZ (1937) come sottospecie della *puta*, ritenuta bona species (BERIO, 1986) confrontando il materiale di S. Giovanni in Sinis e Soleminis con un paratypus in Coll. Berio. BYTINSKI descrisse la "sottospecie" su materiale proveniente da S. Teresa di Gallura (serie tipica 17/10/1934), quindi in prossimità del mare. Visto che a S. Giovanni in Sinis la specie vola abbondantemente, mentre è estremamente rara a Soleminis, distante poco più di 10 km in linea d'aria dal mare, ritengo che si tratti di una entità legata alla costa, quindi probabilmente alofila.
8. *schawerdai*: endemismo assai frequente a Soleminis nonostante la bassa quota. Da notare le due catture precocissime del 23/6/83 e del 30/6/86. Per la segnalazione dalle Baleari (BOURSIN, 1960) permane un forte dubbio, e la specie è probabilmente da cancellare dalla fauna iberica (PEREZ-DE GREGORIO, 1986, comm. pers.).
9. *lata*: la situazione di questo taxon appare molto confusa, poiché viene ritenuto sottospecie di *crassa*, ma già SEITZ parla delle differenze nelle antenne dei ♂♂. Inoltre le

ali posteriori delle ♀ ♀ sono oscurate del tutto e non con la parte prossimale bianca come nelle ♀ ♀ di *crassa*. Per la Sardegna non vi è alcun riferimento a *lata*, bensì a *dirempta* con la quale viene probabilmente confusa. Ad esempio HACHER (1983) afferma che *crassa* si trovi in Sardegna soltanto in montagna da fine agosto all'inizio di settembre e che *dirempta* sia legata alla costa e vola dalla fine di settembre all'inizio di ottobre. Non intendo mettere in dubbio le osservazioni di HACHER, ma ritengo opportuno precisare che esse non trovano conferma con la situazione da me trovata, dato che *crassa* vola a Soleminis (220 m) dalla fine di agosto alla metà di ottobre (!), e le mie "non *crassa*" sia dalla costa occidentale (2 reperti) sia dalle colline di Soleminis (abbondante) praticamente contemporaneamente alla *crassa* (vedi Tabella 2). Viste le differenze sopraelencate si propone quindi — conforme all'opinione di BERIO (comm. pers.) — di elevare *lata* Tr. allo stato di bona species. Per quanto riguarda la statura (carattere assai incerto per singoli individui) si portano i valori statistici del materiale esaminato:

apertura alare	mm	N° esemplari	media mm
♂ ♂ . <i>crassa</i>	31 - 38	33	35,6
<i>lata</i>	34 - 44	82	40
♀ ♀ . <i>crassa</i>	39 - 44	8	41,5
<i>lata</i>	40 - 50	21	44,5

La questione *crassa* - *lata* - *dirempta* rimane comunque incerta finché non vengono confrontate vaste serie di varia provenienza.

10. *simulans*: Prep. Berio 8147.
11. *xanthographa*: di colore assai variabile che va dal grigio al bruno - rossastro.
12. *pronuba*: oltre alla forma tipica presenti le ff. *innuba* Tutt, *ochrea* Tutt, *brunnea* Tutt, *grisea* Tutt, con numerose forme di passaggio.
13. *comes*: oltre alla forma tipica presenti le ff. *rufescens* Tutt, *nigrescens* Tutt, con numerose forme di passaggio.
14. *tirrenica*: sostituisce la *fimbriata* in Sardegna. Prep. Berio 7973.
15. *janthina*: parte del materiale viene attribuita alla f. (ssp.?) *latemarginata* Rob.
16. *saucia*: oltre alla forma tipica presenti le ff. *ochreicosta* Tutt, *nigrocosta* Tutt, *margaritosa* Haw.
17. *faceta*: di colore assai variabile che va dal grigio al bruno - rossastro a quasi nero con disegni ridotti.
18. *sociabilis*: in base alle costanti differenze nel colore di fondo della popolazione di S. Giovanni in Sinis è stata descritta la ssp. *grisea* Berio (1986). Holotypus ♂ (Prep. Berio 8440) ed Allotypus ♀ 4/5/85 leg. Siegel, coll. Berio. Paratypus ♂ 25/4/85, 2 Paratipi 26/9/85 coll. Siegel.
19. *sodae*: la specie manca nell'Italia peninsulare dove è sostituita dalla *stigmosa*, poche segnalazioni attendibili vi sono per la Sardegna. Prep. Berio 8817.
20. *trifolii*: raramente insieme alla forma tipica, compare la f. *farkasii* Tr.
21. *protai*: la specie è particolarmente abbondante a S. Giovanni in Sinis dove trova sulle dune un ottimo habitat riproduttivo essendo abbondante la presunta pianta nutrice delle larve (*Silene* sp.).
22. *behounecki*, nonostante il fatto che già Hartig (in HARTIG & AMSEL, 1951) riferisce sotto la voce *luteago* « appare in una grande razza molto tipica. Il colore di fondo è più uniforme e più chiaro, di giallo oca vivo, ... », soltanto di recente (DE FREINA, 1983) la specie venne descritta nel corso di un'approfondita revisione del gruppo come entità ben distinta da *luteago* ed endemica della Sardegna, HACHER (1983) lo conferma dichiarando inoltre che animali provenienti dalla Corsica appartenessero senz'ombra di dubbio a *luteago*. Prep. Berio 8144.
23. *cappa*: nuova per la Sardegna.
24. *blenna*: nuova per la Sardegna. Prep. Berio 8439.

25. *sicula - scirpi*: le opinioni circa la valutazione dei due taxa sono divergenti: chi considera *scirpi* sottospecie di *sicula* (DUFAY ed altri) chi le considera due specie distinte (FORSTER con dubbio, BERIO). Vista la convivenza si considerano qui, seppure provvisoriamente, come specie distinte.
26. *arbia*: nuova per la Sardegna, BERIO, in *Fauna d'Italia. Noctuidae. I*, presunse l'esistenza di questa specie sulle isole, ora confermata per la Sardegna con due di Soleminis e Torre Grande.
27. *putrescens*: tre esemplari sono più chiari, assai simili alla *punctosa*, come Fig. 12 Tav. XI in BERIO: *Fauna d'Italia. Noctuidae. I*.
28. *vitellina*: la prima generazione è formata da animali grandi di colore più acceso della f. *saturatior* Dan, mentre nella seconda generazione appaiono animali più chiari e più piccoli attribuiti alla forma tipica e alla f. *pallida* War.
29. *platyptera*: presente anche la forma estiva *subalbida* Stgr.
30. *glaucina*: due esemplari corrispondono alla f. *dentimacula* Obth, uno rossastro alla f. tipica, uno alla f. *cinerascens* Obth.
31. *oditis - hispida*: le opinioni sono divergenti in quanto alcuni ritengono *oditis* sinonimo di *hispida* e viceversa. A proposito si veda BERIO, in *Fauna d'Italia. Noctuidae. I*, pp. 503-509, che ritiene che si tratti di due specie distinte. Vi sono quindi *oditis*, leggermente più piccole e *hispida* nella sottospecie *turatii* Schaw più robusta.
32. *lychnidis*: oltre alla forma tipica si riscontrano le ff. *obsoleta*, *pistacina*, *ferrea*, *rubetra*, *coerulescens*, *canaria*, *nigra* con numerose forme di passaggio.
33. *servadeii*: nuova per la Sardegna, una ♀ viene con qualche dubbio attribuita a questa specie.
34. *monochroma*: Prep. Berio 8142 e 8708 (f. *suberis* Berio).
35. *carbonis*: nuova per la Sardegna, Prep. Berio 8055.
36. *lota*: gli animali sono piuttosto oscuri. Prep. Berio 8282 e 8707.
37. *croceago*: la popolazione sarda appartiene alla ssp. *corsica*.
38. *exsoleta*: le larve si trovano in primavera su numerose piante erbacee ed orticole (aglio, fava). 1 esemplare ex larva fine luglio.
39. *spinosa*: sostituisce in Sardegna, Italia Meridionale e Spagna la *solieri*: da notare le due catture precocissime, una di Soleminis, una di S. Giovanni in Sinis (Prep. Berio 8818).
40. *witzenmanni*: specie di notevole variabilità di colore che va dal grigio chiaro al rosso marrone con numerose sfumature di passaggio. L'allevamento ex ovo è stato condotto su *Salix babylonica*.
41. *chamonillae*: Prep. Berio 8340.
42. *wredowi*: Prep. Berio 8342 e 8346. Pare che vi sia qualche dubbio sulla validità del taxon.
43. *dellabrunai*: nuova per la Sardegna. Prep. Berio 8343 e 8345.
44. *thapsiphaga*: una larva di colore verde pallido attribuita a questa specie è stata confermata per la Sardegna.
45. *verbasci*: Prep. Berio 8763 e 8819.
46. *australis*: presenti anche le ff. *ingenua* F. e *scriptura* F. le larve sono state rinvenute in primavera su varie erbacee.
47. *nigra*: le larve sono state rinvenute insieme a quelle di *australis*.
48. *canescens*: presente anche la f. (ssp. ?) *aritzensis*.
49. *flavicincta*: la popolazione sarda appartiene alla ssp. *meridionalis* le larve si rinvencono in primavera su *Ferula comunis*.
50. *lichenaea*: Prep. Berio 8281 e 8706
51. *effusa*: la popolazione appartiene alla ssp. *gallica* Schaw. Non trova conferma il luogo comune, che la specie non vive al di sotto di 600 m (FORSTER, PROLA, ecc.) viste le altitudini di Seneghe (ca. 450 m), Soleminis (220 m) e Oristano Centro Città (10 m !)
52. *ephialtes*: l'unico riferimento a questa specie si trova in DAMRY (1897) che la prese alle melate. Anche a Soleminis le catture si sono avute esclusivamente alle melate per cui la presunta rarità della specie e l'assenza di segnalazioni sembra debba attribuirsi al mancato fototropismo.
53. *meticulosa*: le larve si trovano su svariate erbe.

54. *siegeli* (*Apamea*): descritta: su 3 esemplari provenienti da S. Giovanni in Sinis (BERIO, 1985) nel genere *Enargia* e successivamente trasferita nel gen. *Apamea*. Holotypus ♂, Allotypus ♀: 26/4/85 leg. Siegel coll. Berio. Paratypus ♂ ibidem coll. Siegel.
55. *hyperici*: l'allevamento ex ovo su *Hipericum* diede una precocissima seconda generazione all'inizio di luglio.
56. *secalis*: Prep. Berio ♂ ♂ 8347, 48, 49, 50, 80, 81, 82, 83, 84, 85, 86, 88, 90, 91.
57. *secalella*: alcune ♀ ♀ potrebbero appartenere a questa specie. Vista la descrizione di una terza specie vicina a *secalis* e *secalella* tutto il materiale sarà esaminato successivamente.
58. *pygmina*: gli animali catturati a S. Giovanni in Sinis appartengono alla ssp. *liboydes* Brs. che risulta nuova per l'Italia (Prep. Berio, coll. Berio). La determinazione è stata confermata da J. Plante (Berio, in litt.).
59. *dumerili*: presente anche la f. *uniformis* War.
60. *siegeli* (*Luperina*): descritta su 3 esemplari provenienti da San Giovanni in Sinis (BERIO, 1986). Tutti i 3 esemplari sono diversi fra loro per il colore di fondo che va dal biancastro con fascia pallida al grigio con fascia oscura. La specie appare quindi assai variabile per cui occorre altro materiale per un inquadramento migliore dell'entità. Holotypus ♂ 26/9/85. leg. Siegel, coll. Berio; 2 Paratipi ♂ ♂ 27/9/85 coll. Siegel.
61. *germaini*: Prep. Berio 8137 e 8703.
62. *jurassica*: nuova per la Sardegna. Prep. Berio 8338. Da notare che la specie è stata trovata esclusivamente in prossimità del mare sulla costa occidentale.
63. *psi*: le larve sono state trovate su Mandorlo.
64. *rumicis*: sono state trovate su *Euphorbia* e *Menta*.
65. *algae*: Prep. Berio 8001 e 8007.
66. *pallida*: nuova per la Sardegna.
67. *ochsi*: nuova per la Sardegna, presente anche la f. *badiofasciata* Brs. Prep. Berio 8162.
68. *domestica*: Prep. Berio 8618.
69. *raptricula*: presenti anche le ff. *raptriculoides* Trti, *deceptricula* Hbn., *striata*, *basimaculata* Trti, *oxybiensis* Mill.
70. *adulatrix*: le larve sono state trovate su *Pistacia lentiscus*, l'allevamento ex ovo è stato fatto sulla stessa pianta.
71. *candidana*: nuova per la Sardegna.
72. *dilecta*: alcune larve sono state "battute" da *Quercus ilex*, l'allevamento ex ovo è stato effettuato sulla stessa e diede gli adulti con lieve anticipo (ved. Tabella: 12 esemplari).
73. *elocata*: l'allevamento ex ovo è stato fatto su *Salix babylonica*. Sfarfallamento degli adulti con lieve anticipo, come *dilecta*.
74. *nymphagoga*: presente anche un esemplare della f. *anthracita* Th. M., le larve si trovano facilmente battendo *Q. ilex*.
75. *tirhaca*: presenti anche le ff. *auricularis* Hbn. ed *absens* Wlk. alcune larve sono state trovate su *Pistacia lentiscus*, l'allevamento ex ovo è stato fatto sulla medesima. La specie probabilmente appare in 3 generazioni non ben distinte.
76. *lunaris*: specie di straordinaria variabilità che appare con numerose forme nelle più svariate possibilità di sfumature dal grigio al marrone al nero. Le larve si trovano su foglie giovani di *Quercus ilex* e *Rhamnus alaternus* (?), l'allevamento ex ovo è stato fatto su ambedue.
77. *algira*: l'allevamento è stato fatto su *Rubus*.
78. *fixa*: il genere *Sythymia* va trasferito nelle *Ophiderinae* (BERIO, com. pers.).
79. *spectrum*: nonostante la mancanza di riferimenti precisi a questa specie in Sardegna, numerose sono state trovate su *Anagynis foetida*. Gli adulti nascono d'estate e in cattività frequentano assiduamente le melate appese. Tuttavia nessun esemplare è stato rinvenuto all'esca in natura e un solo esemplare fu preso alla luce.
80. *insularis*: l'allevamento ex ovo è stato tentato su *Pistacia lentiscus* che venne accettato dalle larve giovani.
81. *plumigeralis*: piuttosto rara alla luce, assai frequente all'esca.
82. *lividalis*: vale quanto detto per la *plumigeralis*.
83. *nisseni*: la popolazione appartiene alla ssp. tipica.

[illegible]

SPECIE	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	ANNI	LOCALITÀ
<i>Orthosia</i> <i>rorida</i> Friv. <i>stabilis</i> Schff. <i>cruda</i> Schff.			2	5 3 4 3 1 6									84, 85 84, 85 84 – 86	SO SO SO, SG, TG, SA
					2 1 4 1								83 – 86	SO, TG, MA
					40 15 4 1								83 – 86	SO, FT, TG, SE
<i>Anapoma</i> <i>riparia</i> Bdv. <i>Mythimna</i> (<i>Sablia</i>) <i>sicula</i> Tr. (25)		1	1	44 25 25	3 1			1 11 25	8 22 3 2				83 – 85	SO, DO, SE, SG ST
<i>Mythimna</i> (<i>Sablia</i>) <i>scirpi</i> Dp.				7 8 3 3	1									
<i>(Pseudaletia)</i> <i>unipuncta</i> Haw.	1 1	1	4	11 2 5	5 9 7	6 77 8	95 17	1 2 1	1 3	1 2 2		2 2	82 – 86	SO, OR, SE, TG SI, FT
<i>(Acantholeucania)</i> <i>loreyi</i> Dp. <i>(Leucania)</i> <i>zeae</i> Dp.				1	2 2 3 3 1			1 1	4 2	4 1 2 1			82 – 85	SO, OR, MA, SI
<i>obsoleta</i> Hbn. <i>arbia</i> B-Rg. (26)				1	1 1 1				3				83, 85, 86 85, 86 86, 83	SO, TG, SG TG, SG TG, SO
<i>(Leucania)</i> <i>putrescens</i> Hbn. (27)								1 22 39 106 55	2 1				82 – 85	SO
<i>(Mythimna)</i> <i>albipuncta</i> Schff. <i>vitellina</i> Hbn. (28)				5 10 4 5 2 10 11 29 49 138 53	2 22 2	5 4 1	4	5 22 15 12 8 7	1 1 1	1 3			83 – 85 82 – 86	SO, OR, FT, MA SO, OR, FT, SI, TG, MA
<i>l-album</i> L.	1	1 1 4	2 4	12 20 7	4 19 18	5 2 9	1 4	3 2 2 1 1	4 5 5 4 2			1	82 – 86	SO, OR, MA, TG SI, SA OR TG
<i>congrua</i> Hbn. <i>straminea</i> Tr.					1	1							84 86	
CUCULLINAE														
<i>Cleonymia</i> <i>baetica</i> Rmb.				3 5 1									82 – 85	SO
<i>Omphalophana</i> <i>serrata</i> Tr.				1 2 4 10	1								82 – 86	SO, SG
<i>Calophasia</i> <i>almonravida</i> Grasl.			1	1 1 2									82, 83, 85 83 – 86	SO SO, TG, SG
<i>platyptera</i> Esp. (29)			1	1 2 1 2		1		1	2					
<i>Episema</i> <i>glaucina</i> Bdv. (30)										1 2 1 1			85	SO

SPECIE	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	ANNI	LOCALITÀ
<i>Leucochlaena</i> <i>oditis</i> Hbn. (31)									2	7 3 1			85	SO
<i>hispidula</i> Hbn.									2	8 24 3			85	SO
<i>Agrochola</i> <i>lychnidis</i> Schff. (32)	5									4	60 66 31	19 12 46	82 – 85/86	SO, BA
<i>Dryobotodes</i> <i>eremita</i> F.											1		84	SO
<i>servadeii</i> Par. (33)										1			84	SO
<i>monochroma</i> Esp. (34)									1	2			84, 85	SO
<i>carbonis</i> Wagn. (35)											1		82	SO
<i>Dichonioxia</i> <i>tenebrosa</i> Esp.									1 2 1 1				84, 85	SO
<i>Leptologia</i> <i>lota</i> Cl. (36)	1										1 1		84 – 86	SO
<i>Jodia</i> <i>croceago</i> (37)								1					24-3-85	SO
<i>Cirrhia</i> <i>gilvago</i> Schff.										1			85	SO
<i>Spudaea</i> <i>ruticilla</i> Esp.	1	1	1 1 1	3	1								83 – 86	SO
<i>Xylocampa</i> <i>areola</i> Esp.	13	11 10 11 1	1 1 7	7						4 3 10 13	4 21	82 – 85/86		SO
<i>Dryobota</i> <i>labecula</i> Esp.	1	1							1		1 1		82, 84, 85	SO, OR, MA
<i>Xylena</i> <i>exsoleta</i> L.			1	1			1						83 – 85	SO, US, SI
<i>Trigonophora</i> <i>flammea</i> Esp.										2 50 20	1 3 1		82 – 86	SO, BA
<i>Mniotype</i> <i>spinosa</i> Chret. (39)				2					1 15 51 36 32	11 13 2	3 1		82 – 86	SO, SG
<i>Anmopolia</i> <i>weizenmanni</i> Stnf. (40)										10 61 21	3 2 1		84, 85	SO
<i>Cucullia</i> <i>chamomillae</i> Schff. (41)	2	1 7		1 2 1								1	84, 85	SO
<i>weredowi</i> Costa. (42)		1		1						1 2		2	84, 85	SO, SG
<i>dellabrunai</i> Berio (43)		1										1	84, 85	SO
<i>thapsiphaga</i> Tr. (44)						1 2							85	SO
<i>verbasci</i> L. (45)				3	1								85, 86	SO, SG
<i>Prolitha</i> <i>leautieri</i> Bdv.										9 4 3	1		82 – 85	SO

SPECIE	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	ANNI	LOCALITÀ
<i>Calymnia trapezina</i> L.							1						85	SO
<i>Sesania nonagrioides</i> Lef.					4 2			1	4 2 11	2 3 2			82 - 86	SO, FT, SG
<i>Spodoptera exigua</i> Hbn.				2 1	8 6 28	11 1 2	11 3 5	2 1 2	7 7 11	2 4 23	1		82 - 85	SO
<i>Aethis hospes</i> Frr.				4	3 8	8 2	1	1	1	1			83 - 86	SO, TG
<i>Hoplodrina ambigua</i> Schff.				1 15	64 129 142	51 3 1		1	22 34	9 15 1			82 - 86	SO
<i>Platyperigea aspersa</i> Rmb.						10	19 18 6	20 16 15	1				82 - 85	SO
<i>terrea</i> Frr.					2 4					1			83, 85	SO
<i>germaini</i> Dup. (61)								1	2 9 11	4 1			83 - 85	SO, SG
<i>Paradrina noctuaga</i> Bell.				14 23 16	43 31 1	6 9		2 36	9 11 3	3 1 1			82 - 86	SO, OR, TG, SG MA, SE
<i>selinoides</i> Bell.						20							85	SE
<i>clavipalpis</i> Scop.				2 6 4	18 4 6	4 1	2	4 8	4 5 20	2 4			82 - 85	SO, OR, MA, SE
<i>flavirena</i> Gn.			1	2 1 3	1								83 - 85	SO
<i>jurassica</i> Rigg. (62)				7 1 2	2 1 2								85, 86	SA, SG
ACRONICTINAE														
<i>Acronicta psi</i> L. (63)				2 1 1	12 24 13	8 2 2	1 3 1	1 6	12 8 19	3			82 - 85	SO
<i>rumicis</i> L. (64)			1	2 7 7	3 9 2	2 1 2	5 5 1		3 4				82 - 86	SO
<i>Craniophora ligustri</i>					1 3								85	SO, MA
BRIOPHYLINAE														
<i>Euthales algae</i> F. (65)						2	6 4	2					83 - 85	SO
<i>pallida</i> B-Bk. (66)							2 7 23	12 34 51	7 8 11	1 1			82 - 85	SO, SG (1 es.)
<i>ochsi</i> Brs. (67)						3	10 29 19	9 8 9	2 1				83 - 85	SO
<i>Briophyla domestica</i> Hufn. (68)								2					84, 85	SO, MF
<i>raptricula</i> Schff. (69)					1	8 2 18	67 18 30	9 24 16	5				82 - 85	SO, OR
<i>Bryopsis muralis</i> Forst.							1 5 10	6 9 14	10 2	1			82 - 86	SO, OR
EUTELIINAE														
<i>Eutelia adulatorix</i> Hbn. (70)					4 14 52	41 6 4	2	6	3 6 2				82 - 86	SO

SPECIE	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	ANNI	LOCALITÀ
<i>Trichoplusia orichalcea</i> F.				1									84	SO
<i>circumscripta</i> Frr.					1								83	SO
<i>ni</i> Hbn.					3	4	1	2	1	2	1	4	82 - 86	SO, OR, SG
<i>daubei</i> Bdv.					1								86	SG
CATOCALINAE														
<i>Astiotes dilecta</i> Hbn.						12	1	13	2	1	2	7	82 - 85	SO
<i>Catocala elocata</i> Esp.							12	2	1	2	3	1	82 - 85	SO
<i>conjuncta</i> Esp.							2	5	3	20	11	3	82 - 85	SO, MA
<i>conversa</i> Esp.							2	3	14	9	2		83 - 85	SO
<i>nymphagoga</i> Esp.							9	1	47	65	43	47	83 - 85	SO, MA, SE
<i>Ephesia nymphaea</i> Esp.						26	44	30	37	2	3	1	83 - 85	SO, MA, SE
<i>Ophiusa tirhaca</i> Gr.				7	5	6	29	4	3	1	7	10	82 - 85	SO
<i>Anua lunaris</i> Schff.				12	2	16	26	7	5	5	7	2	82 - 85	SO, MA, SE
<i>Dysgonia algira</i> L.					3	1	5	5	1	1	3	4	82 - 86	SO, OR
<i>Clitie illunaris</i> Hbn.										1			85, 86	CA, US
<i>Grammodes bifasciata</i> Pet.					1	2		1					83, 86	SO, TG
<i>Prodotis stolidi</i> F.										1			83	SO
OPHIDERINAE														
<i>Catephia albymista</i> Schff.					3	5	2	8	1				82 - 85	SO, MA, SE
<i>Aedia leucomelas</i> L.					7	53	23	22	2	1			82 - 85	SO, MA, SE
<i>Tyta luctuosa</i> Schff.				1	2	1	19	39	10	23	1	1	82 - 86	SO
<i>Synthymia fixa</i> F.				2	5	7	3						82 - 85	SO
<i>Lygephila cracca</i> Schff.					1	4	5	1					82, 83, 85	SO, SE
<i>Autophila dilucida</i> Esp.				1	2	2	1	1					83 - 85	SO

SPECIE	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	ANNI	LOCALITÀ
<i>Apopestes spectrum</i> Esp. (79)			1			50	50						83 - 85	SO
<i>Scoliopteryx libatrix</i> L.						1							85	MA
<i>Zethes insularis</i> Rmb. (80)					1	3	6	4					83 - 85	SO
HYPENINAE														
<i>Pechipogo plumigeralis</i> Hbn. (81)					4	25	31	1	1				83 - 85	SO, SE
<i>Nodaria nodosalis</i> H-S.					1	1	2		1	2	3		82 - 86	SO, OR
<i>Paracolax derivalis</i> Schiff.								1					85	SO
<i>Hypena obsitalis</i> Hbn. (82)	1	2		1								1	85	SO
<i>lividalis</i> F.					1				2	1	2	3	84, 85	SO, OR
<i>Parascotia nisseni</i> Tur. (83)													86	SO
<i>Hypenodes costae</i> trigialis Stph.				1									86	SA
<i>Schrankia turfosalis</i> Wocke				1	1								86	TG

Sigle delle località: **SI** - Sinis: 0-20 m s/m. **SG** - San Giovanni in Sinis (Tharros): 0-20 m. **ST** - Sinis, loc. Turr’e’Seu: 0-10 m. **CA** - Cabras: 0-5 m. **TG** - Torre Grande: 0-5 m. **OR** - Oristano Città (centro): 10 m. **FT** - Fiume Tirso, presso Sili (Oristano): 10 m. **SA** - S’Archittu, presso S. Caterina Pittinuri: 10 m. **SE** - Monti Ferru, sopra Seneghe: 500-800 m. **MA** - Monte Arci, pend. occid.: 300-400 m. **OG** - Orgosolo: 600 m. **BA** - Barrali. **US** - Ussana. **DO** - Dolianova (Monti): 400 m. **SO** - Soleminis: 220 m.

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RIASSUNTO

Vengono riportati i dati relativi alla cattura di circa 12.000 esemplari di Noctuidae, appartenenti a 188 specie, raccolti in varie località della Sardegna. Di queste, 12 specie risultano nuove per la fauna sarda, e una sottospecie (*Photedes pygmina libyodes* Brs.) è nuova per l'Italia. Del materiale raccolto sono state descritte da BERIO (1985, 1986) 2 nuove specie, 1 sottospecie e una forma nuova (*Enargia siegeli*, probabilmente *Apamea siegeli*, *Luperina siegeli*, *Cardepija sociabilis* ssp. *grisea* e *Agrotis endogaea* f. *alexandrae*) e due taxa sono stati elevati al rango di specie buona (*Agrotis predotai* Byt-Sz. e *Agrotis lata* Tr.). Tutte le specie vengono elencate con indicazioni sulla frequenza annua e sulle località di rinvenimento; vengono date ulteriori informazioni su 83 specie.

ABSTRACT

Contribution to the knowledge of butterflies from Sardinia. 1. Noctuidae collected from 1981 to 1986 (Lepidoptera).

The Author reports data of about 12.000 of Noctuidae collected in various localities of Sardinia. 12 of 188 species are new for the Sardinia; one species (*Photedes pygmina libyodes* Brs.) results new for Italy. On the material collected have been described as new 2 species, 1 subspecies and 1 form (*Enargia siegeli*, probably *Apamea siegeli*, *Luperina Siegeli*, *Cardepija sociabilis* ssp. *grisea* and *Agrotis endogaea* f. *alexandrae*). Further two taxa have been elevated to bonae species (*Agrotis predotai* Byt-Sz. and *Agrotis lata* Tr.). All species are listed with indication of their distribution during the year and locality of capture. To 83 species are given further informations.

MARCO DELLACASA

CONTRIBUTION TO A WORLD-WIDE CATALOGUE OF
AEGIALIDAE, APHODIIDAE, AULONOCNEMIDAE,
TERMITOTROGIDAE
(Coleoptera Scarabaeoidea)

ADDENDA ET CORRIGENDA
(First Note)

PART I

INTRODUCTION

Page 5 Line 39 autor must be: author

SUMMARY

Page	12	Line	20	sottofamiglie must be: famiglie
"	13	"	8	sonno must be: sono
"	15	"	9	-sturmi must be: =sturmi

ACKNOWLEDGMENTS

Page 21 Line 7 laerning must be: learning

I. ALPHABETICAL LIST

Pag.	Col.	Line	
25	2	4	4945 - <i>Aegialatis</i> Kono, 1938: must be dropped
26	2	39	after <i>amplipennis</i> should be: 5529 - <i>amplipunctata</i> Gord. & Cart., 1988
27	2	12	<i>Aphodalacus</i> must be: <i>Aphodaulacus</i>
27	2	41	after <i>apicipennis</i> should be: 5534 - <i>aprilis</i> Bordat, 1988
29	1	15	after <i>atrosulcatus</i> should be: 5526 - <i>atsushii</i> Ochi, 1986
29	2	15	Rakovich must be: Rakovic
29	2	21	after <i>badius</i> should be: 5541 - <i>badius</i> Sturm, 1826
29	2	37	Rakovich must be: Rakovic

Pag. Col. Line

- 30 2 18 1982 must be: 1826
- 33 2 40 after *carinatus* should be: 5554 - *carinatus* Sturm, 1843
- 33 2 49 after *carri* should be: 5528 - *carri* Gord. & Cart., 1988
- 34 1 49 1836 must be: 1833
- 34 2 7 1847 must be: 1845
- 34 2 8 1847 must be: 1845
- 35 2 24 Kolbe must be: W. Kolbe
- 36 1 38 *conjuctulus* must be: *conjunctulus*
- 36 2 46 after *convexus* should be: 5553 - *convexus* Sturm, 1843
- 37 1 8 Koschnt. must be: Koshant.
- 37 2 2 1982 must be: 1826
- 38 2 40 after *denieri* should be: 5548 - *denigratus* Sturm, 1826
- 39 1 29 1847 must be: 1843
- 40 1 12 *dobrovljansky* must be: *dobrovljanskyi*
- 40 2 1 Welker must be: Walker
- 43 2 14 Tag. must be: Tang.
- 43 2 20 5146 - *fossor* Robert, 1838† must be dropped
- 44 1 25 after *fulvus* should be: 5542 - *fulvus* Melsheimer, 1826
- 44 1 26 1847 must be: 1845
- 45 2 1 before *graecus* should be:
1088 - *gracilis* Boheman, 1857
1089 - *gracilis* Melsheimer, 1844
3766 - *gracilis* Arrow, 1905
4892 - *gracilis* Duval, 1856
3820 - *gracilitarsis* Petrovitz, 1973
- 45 2 14 *granosus* Klug & Erichson, 1842 must be: *granosus* Klug, 1842
- 45 2 41 *grebenscikovi* must be: *grebenschikovi*
- 46 2 4 after *haemorrhous* should be: 5550 - *haemorrhous* Sturm, 1843
- 46 2 40 *hauserius* must be: *Hauserius*
- 47 1 48 1833 must be: 1826
- 49 1 21 after *infuscatus* should be: 5546 - *infuscatus* Sturm, 1843
- 50 1 12 after *irregularis* should be: 5524 - *irregularis* Hope, 1839
- 50 1 13 after *irritans* should be: 4960 - *isabelae* Franz, 1985
- 50 1 14 after *isaburoi* should be: 5527 - *ishidai* Mas. & Kiuc., 1987
- 50 2 41 after *kelleri* should be: 5531 - *kelsoi* Gord. & Cart., 1988
- 51 1 9 after *kistneri* should be: 4944 - *kitanoi* Miyake, 1982
- 51 1 20 ?1918 must be: 1918
- 53 1 1 before *limbatus* should be: 5557 - *limbatus* Sturm, 1826
- 53 1 20 after *lineatus* should be: 5547 - *lineatus* Ullrich, 1826
- 54 1 26 after *lutulentus* should be: 5545 - *lutulentus* Melsheimer, 1826
- 55 1 50 after *Martinezia* should be: 4945 - *Martineziella* Chalumeau, 1986
- 55 2 46 1843 must be: 1826
- 57 1 33 1843 must be: 1826
- 58 2 42 1847 must be: 1843
- 58 2 47 after *nigrinus* should be: 5525 - *nigripennis* Miksic, 1962
- 59 1 6 after *nigritulus* should be: 5555 - *nigritulus* Billberg, 1843
- 59 1 17 after *nigromaculatus* should be: 5539 - *nigromarginatus* Cockerell, 1888
- 59 2 37 after *oasis* should be: 5532 - *Obaphodius* Bordat, 1988

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60	1	8	after <i>oblongus</i> should be: 5537 - <i>oblongus</i> Thunberg, 1814
60	1	35	after <i>ochraceus</i> should be: 5538 - <i>ochraceus</i> Wiedemann, 1821
60	2	43	<i>opistius</i> must be: <i>opisthius</i>
61	1	10	1869 must be: 1826
61	2	23	after <i>pallidus</i> should be: 5552 - <i>pallidus</i> Parreyss, 1826
61	2	30	<i>palmetinculus</i> must be: <i>palmetincolus</i>
63	2	43	after <i>pictus</i> should be: 5523 - <i>pierreclementi</i> M. Dell., 1988
64	1	14	after <i>plagiatus</i> should be: 5559 - <i>plagiatus</i> Petrovitz, 1964
64	2	19	after <i>porcellus</i> should be: 5544 - <i>porcellus</i> Sturm, 1843
64	2	46	1833 must be: 1826
65	2	24	<i>pseudosugrames</i> must be: <i>Pseudosugrames</i>
67	1	33	after <i>rasettii</i> should be: 5560 - <i>ratnapurensis</i> Stebnicka, 1988
68	1	30	after <i>rubens</i> should be: 5540 - <i>rubens</i> Olsoufieff, 1918
68	2	10	after <i>ruficlarus</i> should be: 5536 - <i>ruficornis</i> Thunberg, 1814
69	1	13	after <i>rugicollis</i> should be: 5558 - <i>rugicollis</i> Megerle, 1826
69	2	49	after <i>satyrus</i> should be: 5556 - <i>saucius</i> Sturm, 1826
71	1	41	1833 must be: 1826
72	1	13	after <i>silvaticus</i> should be: 5533 - <i>silvestris</i> Bordat, 1988
72	1	20	after <i>similis</i> should be: 5543 - <i>similis</i> Sturm, 1843
72	1	30	after <i>simplex</i> should be: 5549 - <i>simplex</i> Sturm, 1843
73	1	20	after <i>spinitarsis</i> should be: 5530 - <i>spinosa</i> Gord. & Cart., 1988
73	1	47	4960 - <i>stejnegeri</i> Kono, 1938 must be dropped
73	2	17	Hartig, 0000 must be: Hartung, 1857
74	1	27	1843 must be: 1826
74	2	3	4944 - <i>sugiharai</i> Kono, 1938 must be dropped
75	2	22	<i>tenerum</i> must be: <i>tenerus</i>
75	2	23	after <i>tenuimanus</i> should be: 5146 - <i>tenuipunctata</i> Bordat, 1988
79	1	21	after <i>vittatus</i> should be: 5551 - <i>vittatus</i> Melsheimer, 1826
79	2	49	after <i>youngai</i> should be: 5535 - <i>Youngaphodius</i> Bordat, 1988
80	2	13	ADDENDA must be dropped
80	2	14	5523 - <i>pierreclementi</i> M. Dell., 1988 must be dropped

II. NOMENCLATORIAL SYNOPSIS

a) the following items must be modified in someone of their terms:

0030 - acerbus Horn, 1887 TYPE DEP .: MCZHUC L/T-TYP .: ?San Antonio, Texas, USA. NOM. ST .: val. n. sp TAX. POS .: Ammoecius sp a. 0039 - adelaidae Hope, 1846 TYPE DEP .: BMNHL L/T-TYP .: Adelaide, AUS, (c). NOM. ST .: n. sp syn. TAX. POS .: = granarius Linné, 1767 0040 - adolfischmidtii Reitter, 1909 TYPE DEP .: L/T-TYP .: Uralsk, SU. NOM. ST .: n. sp syn. TAX. POS .: = brancsiki Reitter, 1899	0044 - aeger Sharp, 1878 TYPE DEP .: L/T-TYP .: Yangihissar, Yarkand, CHI. NOM. ST .: val. n. sp TAX. POS .: Aphodius sp a. 0046 - aegrotus Horn, 1870 TYPE DEP .: MCZHUC L/T-TYP .: North Carolina, USA. NOM. ST .: val. n. sp TAX. POS .: Blackburneus sp a. 0047 - aemulus Horn, 1887 TYPE DEP .: MCZHUC L/T-TYP .: Southern Arizona, USA. NOM. ST .: val. n. sp TAX. POS .: Pseudagolius sp a.
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0074 - alatavicus Nikolajev, 1974 LN 0405
TYPE DEP ..: ZIMANL
L/T-TYP ...: Alatai, Alma Ata, SU.
NOM. ST ...: n. sp syn.
TAX. POS ...: = makowskyi D. Koshant., 1891

0092 - alpinus Drapiez, 1819 LN 0757
TYPE DEP ..:
L/T-TYP ...: Alpes, I.
NOM. ST ...: n. sp hom.
TAX. POS ...: = carinatus Germar, 1824

0095 - alternatus Horn, 1870 LN 0754
TYPE DEP ..: MCZHUC
L/T-TYP ...: Bitter Root Val., USA, (r)
NOM. ST ...: val. n. sp
TAX. POS ...: Chilothorax sp a.

0136 - anthracinus Leconte, 1878 LN 1803
TYPE DEP ..: MCZHUC
L/T-TYP ...: Fork Canon, Utah, USA.
NOM. ST ...: val. n. sp
TAX. POS ...: Pseudagolius sp a.

0182 - ardoei Landin, 1954 LN 0122
TYPE DEP ..: UZIL
L/T-TYP ...: Laxvik, Tronninge, S.
NOM. ST ...: n. sp syn.
TAX. POS ...: = nemoralis Erichson, 1848

0184 - arenarius Olivier, 1789 LN 0406
TYPE DEP ..: MNHNP
L/T-TYP ...: env. Paris, F.
NOM. ST ...: n. sp syn.
TAX. POS ...: = putridus Fourcroy, 1785

0225 - aterrimus Sturm, 1843 LN 2012
TYPE DEP ..:
L/T-TYP ...: Amer. bor., AA.
NOM. ST ...: nnu. sp
TAX. POS ...: = aterrimus Melsheimer, 1844

0236 - nanus Horn, 1887 LN 1749
TYPE DEP ..: MCZHUC
L/T-TYP ...: Massachusset, USA, (r).
NOM. ST ...: n. sp mis.
TAX. POS ...: = parvulus Chevrolat, 1864

0253 - aurivillii Clouet, 1901 LN 1629
TYPE DEP ..: IRSNBB
L/T-TYP ...: Congo, ZR.
NOM. ST ...: val. n. sp.
TAX. POS ...: Rhyssemus sp a.

0278 - barbarus Fairmaire, 1860 LN 0901
TYPE DEP ..: MNHNP
L/T-TYP ...: Barbarie, DZ, (r).
NOM. ST ...: val. n. sp.
TAX. POS ...: Melaphodius sp b.

0282 - bartosi Balthasar, 1938 LN 0023
TYPE DEP ..: BCP
L/T-TYP ...: Talass-Tal, Syr-Daria, SU.
NOM. ST ...: n. sp syn.
TAX. POS ...: = makowskyi D. Koshant., 1891

0316 - bidens Leconte, 1878 LN 1803
TYPE DEP ..: MCZHUC
L/T-TYP ...: Colorado, USA.
NOM. ST ...: n. sp hom.
TAX. POS ...: = bidentatus A. Schmidt, 1906

0327 - biguttatus Dahl, 1833 LN 1263
TYPE DEP ..:
L/T-TYP ...: Austria, A.
NOM. ST ...: nnu. sp
TAX. POS ...: = putridus Herbst, 1789

0338 - transformis Balthasar, 1965 LN 0246
TYPE DEP ..: BCP
L/T-TYP ...: Umgb. Chushirt, MPR.
NOM. ST ...: n. sp syn.
TAX. POS ...: = melanostictus W. Sch., 1840

0389 - bonariensis Klug, 1829 LN 1778
TYPE DEP ..: ZMHUB
L/T-TYP ...: Sud-Brasilien, BR, (c).
NOM. ST ...: n. sp syn.
TAX. POS ...: = stercorator Fabricius, 1775

0399 - bouvieri Clouet, 1901 LN 1629
TYPE DEP ..: MNHNP
L/T-TYP ...: North Pekin, China, CHI.
NOM. ST ...: val. n. sp
TAX. POS ...: Rhyssmodes sp b.

0407 - brevicollis Leconte, 1878 LN 1803
TYPE DEP ..: MCZHUC
L/T-TYP ...: Nebraska, USA.
NOM. ST ...: val. n. sp
TAX. POS ...: Platyderides sp b.

0412 - brevipennis Sturm, 1843 LN 2012
TYPE DEP ..:
L/T-TYP ...: Hispania, E.
NOM. ST ...: nnu. sp syn.
TAX. POS ...: = conflagratus Olivier, 1789

0421 - breviusculus Motschulsky, 1866 LN 1303
TYPE DEP ..: ZMMUM
L/T-TYP ...: Japon, J.
NOM. ST ...: val. n. sp
TAX. POS ...: Agrilinus sp b.

0424 - brivioi Petrovitz, 1961 LN 0309
TYPE DEP ..: MCSNM
L/T-TYP ...: Masulipatan, Kistna, IND.
NOM. ST ...: val. n. sp
TAX. POS ...: Paradidactylia sp b.

0425 - brouni Sharp, 1876 LN 1992
 TYPE DEP .. :
 L/T-TYP ... : New Zealand, NZ, (c).
 NOM. ST ... : val. n. sp
 TAX. POS ... : Saproites sp b.

0441 - burgaltaicus Csiki, 1901 LN 1643
 TYPE DEP .. :
 L/T-TYP ... : Burgaltai, Mongolia, MPR.
 NOM. ST ... : n. sp syn.
 TAX. POS ... : = culminarius Reitter, 1900

0444 - caelatus Leconte, 1857 LN 1799
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : San Francisco, Cal., USA.
 NOM. ST ... : val. n. sp
 TAX. POS ... : Tesarius sp c.

0538 - Chaetopisthes Westwood, 1845 LN 2039
 TYPE DEP .. : - - - - -
 L/T-TYP ... : Chaetopistes W. s. str. (t).
 NOM. ST ... : val. n. G
 TAX. POS ... : Corythoderinae G C.

0566 - cincticulus Hope, 1846 LN 2064
 TYPE DEP .. : BMNHL
 L/T-TYP ... : Adelaide, AUS, (c).
 NOM. ST ... : n. sp syn.
 TAX. POS ... : = lividus Olivier, 1789

0604 - cohersi W. Kolbe, 1911 LN 1783
 TYPE DEP .. :
 L/T-TYP ... : Falkenau, Sachsen, D.
 NOM. ST ... : val. n. ab
 TAX. POS ... : scybalarius ab c.

0609 - coloradensis Horn, 1870 LN 0754
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : Colorado, USA.
 NOM. ST ... : val. n. sp
 TAX. POS ... : Pseudagolius sp c.

0643 - conjunctulus Reitter, 1892 LN 1602
 TYPE DEP .. :
 L/T-TYP ... : Mitteleuropa, EA, (r).
 NOM. ST ... : val. n. ab
 TAX. POS ... : biguttatus ab c.

0649 - consentaneus Leconte, 1850 LN 1798
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : Lake Superior, CDN, (c).
 NOM. ST ... : val. n. sp
 TAX. POS ... : Nobius sp c.

0652 - consociatus Horn, 1887 LN 1749
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : California, USA.
 NOM. ST ... : val. n. sp
 TAX. POS ... : Chilothorax sp c.

0656 - conspersus Horn, 1887 LN 1749
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : Mendocino Co., Calif., USA
 NOM. ST ... : val. n. sp
 TAX. POS ... : Tetraclopeoides sp c.

0683 - corallifer W. Koshant., 1913 LN 0759
 TYPE DEP .. :
 L/T-TYP ... : Ningpo, CHI
 NOM. ST ... : val. n. sp
 TAX. POS ... : Aphodius sp c.

0706 - crassulus Horn, 1870 LN 0754
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : Georgia, USA, (r).
 NOM. ST ... : val. n. sp
 TAX. POS ... : Mendidius sp c.

0720 - cribratus Leconte, 1878 LN 1803
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : Oregon, USA.
 NOM. ST ... : n. sp hom.
 TAX. POS ... : = cribratulus A. Schmidt, 1916

0729 - cruentatus Leconte, 1878 LN 1803
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : Northern New Mexico, USA.
 NOM. ST ... : val. n. sp
 TAX. POS ... : Pseudagolius sp c.

0757 - decipiens Horn, 1887 LN 1749
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : Western Nevada, USA.
 NOM. ST ... : val. n. sp
 TAX. POS ... : Amidorus sp d.

0775 - dentiger Leconte, 1858 LN 0801
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : Gila, Arizona, USA.
 NOM. ST ... : val. n. sp
 TAX. POS ... : Pseudagolius sp d.

0784 - deserti Blackburn, 1894 LN 1577
 TYPE DEP .. :
 L/T-TYP ... : Oodnadatta, Cent. Au., AUS.
 NOM. ST ... : val. n. sp
 TAX. POS ... : Ataenius sp d.

0805 - digitalis D. Koshant., 1894 LN 0253
 TYPE DEP .. : x 0806
 L/T-TYP ... : - - - - -
 NOM. ST ... : v. nno. sp
 TAX. POS ... : Alocoderus sp d.

0813 - politus Horn, 1870 LN 0754
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : Texas, USA.
 NOM. ST ... : n. sp hom.
 TAX. POS ... : = haldemani Horn, 1887

- 0819 - discolor** Erichson, 1842 LN 1780
 TYPE DEP .. ZMHUB
 L/T-TYP ... Senegal, SER, (c).
 NOM. ST ... val. n. sp
 TAX. POS ... *Pharaphodius* sp d.
- 0850 - duplex** Leconte, 1878 LN 1803
 TYPE DEP .. MCZHUC
 L/T-TYP ... Colorado, USA.
 NOM. ST ... val. n. sp
 TAX. POS ... *Agrilinus* sp d.
- 0857 - echinatus** Petrovitz, 1961 LN 0309
 TYPE DEP .. MCSNM
 L/T-TYP ... Dhanjurii V., Bengal, IND.
 L/T-TYP ... n. sp syn.
 TAX. POS ... = *castetsi* Paulian, 1936
- 0925 - explanatus** Leconte, 1878 LN 1803
 TYPE DEP .. MCZHUC
 L/T-TYP ... Colorado, USA.
 NOM. ST ... val. n. sp
 TAX. POS ... *Platyderides* sp e.
- 0992 - foetidus** Fabricius, 1792 LN 1171
 TYPE DEP .. ZMUKK
 L/T-TYP ... Germania, D.
 NOM. ST ... n. sp syn.
 TAX. POS ... = *putridus* Herbst, 1789
- 1004 - fortipes** Broun, 1886 LN 2577
 TYPE DEP
 L/T-TYP ... Taranaki, Mt. Egmont, NZ.
 NOM. ST ... val. n. sp
 TAX. POS ... *Saprosites* sp f.
- 1060 - gentilis** Horn, 1887 LN 1749
 TYPE DEP .. MCZHUC
 L/T-TYP ... San Francisco, Calif., USA
 NOM. ST ... val. n. sp
 TAX. POS ... *Stenotothorax* sp g.
- 1072 - Gilletianus** Balthasar, 1933 LN 0219
 TYPE DEP .. - - - - -
 L/T-TYP ... *proclivis* Balthasar, (m).
 NOM. ST ... n. Sbg syn.
 TAX. POS ... = *Trichaphodius* A. Sch., 1913
- 1085 - gotoi** Nomura & Nakane, 1951 LN 1317
 TYPE DEP
 L/T-TYP ... Mt. Nekodake, Sugadaira, J.
 NOM. ST ... val. n. sp
 TAX. POS ... ?*Agrilinus* sp g.
- 1086 - goyderensis** Blackburn, 1896 LN 1578
 TYPE DEP
 L/T-TYP ... Goyder R., Hugh Creek, AUS.
 NOM. ST ... val. n. sp
 TAX. POS ... *Ataenius* sp g.
- 1087 - gracilipes** Harold, 1867 LN 0286
 TYPE DEP .. ZNHUB
 L/T-TYP ... Chili, RCH, (c).
 NOM. ST ... val. n. sp
 TAX. POS ... *Podotenus* sp g.
- 1106 - exsculptus** White, 1846 LN 2040
 TYPE DEP .. ?BMNHL
 L/T-TYP ... New Zealand, NZ, (c).
 NOM. ST ... val. n. sp
 TAX. POS ... *Saprosites* sp e.
- 1109 - grebenschikovi** Balthasar, 1961 LN 0095
 TYPE DEP .. BCP
 L/T-TYP ... Ulan-Bator, Mongolien, MPR
 NOM. ST ... val. n. sp
 TAX. POS ... *Pseudacrossus* sp g.
- 1186 - howitti** Hope, 1846 LN 2064
 TYPE DEP .. BMNHL
 L/T-TYP ... Port Phillip, AUS.
 NOM. ST ... val. n. sp
 TAX. POS ... *Acrossidius* sp h.
- 1191 - humeralis** W. Kolbe, 1911 LN 1783
 TYPE DEP
 L/T-TYP ... Weisses Kreuz, Beskiden, D.
 NOM. ST ... n. ab hom.
 TAX. POS ... = *kolbeanus* A. Schmidt, 1916
- 1278 - laeviventris** Horn, 1887 LN 1749
 TYPE DEP .. MCZHUC
 L/T-TYP ... Southern Arizona, USA.
 NOM. ST ... n. sp syn.
 TAX. POS ... = *lobatus* Horn, 1871
- 1303 - inutilis** Horn, 1887 LN 1749
 TYPE DEP .. MCZHUC
 L/T-TYP ... San Francisco, USA, (r).
 NOM. ST ... n. sp syn.
 TAX. POS ... = *granarius* Linné, 1758
- 1312 - irregularis** Westwood, 1839 LN 2037
 TYPE DEP .. BMNHL
 L/T-TYP ... In Mont. Himalayae, IND.
 NOM. ST ... val. n. sp
 TAX. POS ... *Aphodius* sp i.
- 1321 - jakovlevi** W. Koshants., 1912 LN 0422
 TYPE DEP
 L/T-TYP ... Nikolaevskij, Saratov, SU.
 NOM. ST ... n. sp syn.
 TAX. POS ... = *costalis* Gebler, 1848
- 1341 - kashmirensis** Sharp, 1878 LN 1993
 TYPE DEP
 L/T-TYP ... Dras, Ladak, IND, (r).
 NOM. ST ... val. n. sp
 TAX. POS ... *Loraphodius* sp k.

1357 - kluchoris Roubal, 1918	LN 2583
TYPE DEP ..:	
L/T-TYP ...: Kluchor-Pass, Caucasus, SU	
NOM. ST ...: val. n. sp	
TAX. POS ...: Amidorus sp k.	
1395 - larreae Horn, 1887	LN 1749
TYPE DEP ..: MCZHUC	
L/T-TYP ...: El Paso, Texas, USA.	
NOM. ST ...: val. n. sp	
TAX. POS ...: Erytus sp l.	
1414 - lentus Horn, 1870	LN 0754
TYPE DEP ..: MCZHUC	
L/T-TYP ...: Pennsylvania, USA, (r).	
NOM. ST ...: val. n. sp	
TAX. POS ...: Amidorus sp l.	
1416 - leopardus Horn, 1870	LN 0754
TYPE DEP ..: MCZHUC	
L/T-TYP ...: Maine, USA, (r).	
NOM. ST ...: val. n. sp	
TAX. POS ...: Chilo thorax sp l.	
1438 - limbatus Wiedemann, 1821	LN 2584
TYPE DEP ..:	
L/T-TYP ...: Prom. bon. sp., ZA.	
NOM. ST ...: val. n. ab	
TAX. POS ...: lividus ab l.	
1439 - sulcipennis Boheman, 1857	LN 1586
TYPE DEP ..: NRS	
L/T-TYP ...: Caffraria mer., ZA, (r).	
NOM. ST ...: val. n. sp	
TAX. POS ...: Pleuraphodius sp s.	
1518 - luteolus Horn, 1887	LN 1749
TYPE DEP ..: MCZHUC	
L/T-TYP ...: New Mexico, USA.	
NOM. ST ...: val. n. sp	
TAX. POS ...: Platyderides sp l.	
1520 - luxatus Horn, 1887	LN 1749
TYPE DEP ..: MCZHUC	
L/T-TYP ...: California, USA, (r).	
NOM. ST ...: val. n. sp	
TAX. POS ...: ?Mendidus sp l.	
1629 - militaris Leconte, 1858	LN 0801
TYPE DEP ..: MCZHUC	
L/T-TYP ...: San Diego, California, USA	
NOM. ST ...: val. n. sp	
TAX. POS ...: Cinacanthus sp m.	
1635 - miniatulus Balthasar, 1931	LN 0055
TYPE DEP ..: BCP	
L/T-TYP ...: Issik-Kul, Turkestan, SU.	
NOM. ST ...: n. sp syn.	
TAX. POS ...: = lapponum Gyllenhal, 1806	

1662 - montanus Sturm, 1826	LN 2612
TYPE DEP ..:	
L/T-TYP ...: Austria, A.	
NOM. ST ...: nnu. sp	
TAX. POS ...: = alpinus Scopoli, 1763	
1710 - nanus Horn, 1887	LN 1749
TYPE DEP ..: MCZHUC	
L/T-TYP ...: Carrizo Spring, Texas, USA	
NOM. ST ...: n. sp hom.	
TAX. POS ...: = asellus A. Schmidt, 1907	
1714 - nasalis D. Koshantschikov, 1894	LN 0255
TYPE DEP ..:	
L/T-TYP ...: Artutsch, SU.	
NOM. ST ...: n. sp syn.	
TAX. POS ...: = alaiensis Reitter, 1892	
1736 - nevadensis Horn, 1870	LN 0754
TYPE DEP ..: MCZHUC	
L/T-TYP ...: Nevada, USA.	
NOM. ST ...: val. n. sp	
TAX. POS ...: Stenoto thorax sp n.	
1769 - Nipponaphodius Nakane, 1959	LN 0653
TYPE DEP ..: - - - - -	
L/T-TYP ...: gotoi Nom. & Nak., (od).	
NOM. ST ...: n. Sbg ?syn.	
TAX. POS ...: =?Agrilinus Muls. & Rey, 1869	
1772 - nitidulus Waterhouse, 1875	LN 1601
TYPE DEP ..: BMNHL	
L/T-TYP ...: Nagasaki, J.	
NOM. ST ...: n. sp syn.	
TAX. POS ...: = breviusculus Motsch., 1866	
1774 - nitidus Kuster, 1849	LN 1789
TYPE DEP ..:	
L/T-TYP ...: Gebirgen Montenegros, YU.	
NOM. ST ...: n. sp syn.	
TAX. POS ...: = putridus Fourcroy, 1785	
1786 - nox Iablokov, 1971	LN 0960
TYPE DEP ..: ZIANAE	
L/T-TYP ...: Karamet-niyaz, Turkm., SU.	
NOM. ST ...: n. sp syn.	
TAX. POS ...: = transcaspicus Petrovitz, 1961	
1814 - obtusus Leconte, 1878	LN 1803
TYPE DEP ..: MCZHUC	
L/T-TYP ...: Colorado, USA.	
NOM. ST ...: val. n. sp	
TAX. POS ...: Bodilus sp o.	
1815 - occidentalis Horn, 1870	LN 0754
TYPE DEP ..: MCZHUC	
L/T-TYP ...: Montana, USA, (r).	
NOM. ST ...: val. n. ab.	
TAX. POS ...: hamatus ab o.	

1836 - opacus Leconte, 1872 LN 0301
 TYPE DEP ..: MCZHUC
 L/T-TYP ..: Vancouver Island, CDN.
 NOM. ST ...: val. n. sp
 TAX. POS ...: Amidorus sp o.

1841 - opisthius Bates, 1887 LN 1533
 TYPE DEP ..: x 0848
 L/T-TYP ...: -----
 NOM. ST ...: v. nno. sp
 TAX. POS ...: Trichaphodius sp o.

1846 - ornatus Findel, 1826 LN 2612
 TYPE DEP ..:
 L/T-TYP ...: Bannat, H.
 NOM. ST ...: nnu. sp
 TAX. POS ...: = alpinus Scopoli, 1763

1862 - ovipennis Horn, 1870 LN 0754
 TYPE DEP ..: MCZHUC
 L/T-TYP ...: Fort Tejon, Cal., USA.
 NOM. ST ...: val. n. sp
 TAX. POS ...: Stenotothorax sp o.

1869 - paivanus Wollaston, 1867 LN 2053
 TYPE DEP ..: BMNHL
 L/T-TYP ...: Fogo, Cape Verde A., CVI, (r)
 NOM. ST ...: n. sp syn.
 TAX. POS ...: = nigrita Fabricius, 1801

1886 - sus Kugelan, 1792 LN 1445
 TYPE DEP ..:
 L/T-TYP ...: Preussen, D.
 NOM. ST ...: n. ab hom.
 TAX. POS ...: =?uliginosus Hardy, 1847

1893 - palmetincola Karsch, 1881 LN 1220
 TYPE DEP ..: -----
 L/T-TYP ...: -----
 NOM. ST ...: n. sp is.
 TAX. POS ...: = palmetincolus Karsch, 1881

1894 - palmetincolus Karsch, 1881 LN 1220
 TYPE DEP ..:
 L/T-TYP ...: Sockna, Libya, LY.
 NOM. ST ...: val. n. sp
 TAX. POS ...: Mendidius sp p.

1898 - pamirensis Medvedev, 1928 LN 1839
 TYPE DEP ..: ZIMANL
 L/T-TYP ...: Kara-kul, Pamir, SU, (r).
 NOM. ST ...: val. n. sp
 TAX. POS ...: Chilothonax sp p.

1914 - parcus Horn, 1887 LN 1749
 TYPE DEP ..: MCZHUC
 L/T-TYP ...: Eastern Florida, USA.
 NOM. ST ...: val. n. sp
 TAX. POS ...: Aphodius Subgenere incerto

1930 - pectoralis Leconte, 1857 LN 1799
 TYPE DEP ..: MCZHUC
 L/T-TYP ...: San Francisco, Ca., USA.
 NOM. ST ...: val. n. sp
 TAX. POS ...: Agrilinus sp p.

1963 - phaeopterus Leconte, 1878 LN 1803
 TYPE DEP ..: MCZHUC
 L/T-TYP ...: Atlanta, Idaho, USA.
 NOM. ST ...: val. n. sp
 TAX. POS ...: Platyderides sp p.

1965 - phalerioides Horn, 1870 LN 0754
 TYPE DEP ..: MCZHUC
 L/T-TYP ...: Middle States, USA.
 NOM. ST ...: val. n. sp
 TAX. POS ...: Chilothonax sp p.

1984 - pinguis Haldeman, 1848 LN 1277
 TYPE DEP ..: MCZHUC
 L/T-TYP ...: Lake Superior, CDN.
 NOM. ST ...: val. n. sp
 TAX. POS ...: Diapterna sp p.

2032 - procerus Illiger, 1826 LN 2612
 TYPE DEP ..:
 L/T-TYP ...: Cap. Bon. Sp., ZA.
 NOM. ST ...: nnu. sp
 TAX. POS ...: = procerus Harold, 1862

2107 - pusillus Preyssler, 1790 LN 1917
 TYPE DEP ..:
 L/T-TYP ...: Bohemia, CS.
 NOM. ST ...: n. sp syn.
 TAX. POS ...: = putridus Fourcroy, 1785

2115 - putridus Fourcroy, 1785 LN 1678
 TYPE DEP ..:
 L/T-TYP ...: Parisiis, F, (c).
 NOM. ST ...: val. n. sp
 TAX. POS ...: Plagiogonus sp p.

2116 - putridus Herbst, 1789 LN 1731
 TYPE DEP ..:
 L/T-TYP ...: ?Deutschland, D.
 NOM. ST ...: val. n. ab
 TAX. POS ...: uliginosus ab p.

2128 - quadriguttatus Tams, 1833 LN 1263
 TYPE DEP ..:
 L/T-TYP ...: Russia mer., SU.
 NOM. ST ...: nnu. sp
 TAX. POS ...: = transitus Reitter, 1892

2132 - quadripunctatus Panzer, 1789 LN 2288
 TYPE DEP ..:
 L/T-TYP ...: Germania, D.
 NOM. ST ...: val. n. ab
 TAX. POS ...: sordidus ab q.

2170 - rhododactylus Marsham, 1802 LN 1829
 TYPE DEP .. :
 L/T-TYP ... : New Market, Barton M., GB.
 NOM. ST ... : n. sp syn.
 TAX. POS ... : = putridus Fourcroy, 1785

2200 - rubidus Sturm, 1843 LN 2012
 TYPE DEP .. :
 L/T-TYP ... : Amer. bor., AA.
 NOM. ST ... : nnu. sp
 TAX. POS ... : = rubeolus Beauvois, 1805

2201 - rubiginosus Horn, 1870 LN 0754
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : Camp Grant, Arizona, USA.
 NOM. ST ... : val. n. sp
 TAX. POS ... : Koshantschikovius sp r.

2204 - rubripennis Horn, 1870 LN 0754
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : Canada, CDN, (r).
 NOM. ST ... : val. n. sp
 TAX. POS ... : Acrossus sp r.

2208 - rudis Leconte, 1878 LN 1803
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : Colorado, USA.
 NOM. ST ... : val. n. sp
 TAX. POS ... : Platyderides sp r.

2229 - nigrella Brown, 1931 LN 2608
 TYPE DEP .. : CNCO
 L/T-TYP ... : Trinity Co., Califor., USA
 NOM. ST ... : val. n. sp
 TAX. POS ... : Aegialia sp n.

2244 - russatus Erichson, 1842 LN 1780
 TYPE DEP .. : ZMHUB
 L/T-TYP ... : Senegal, SER, (c).
 NOM. ST ... : val. n. sp
 TAX. POS ... : Pharaphodius sp r.

2267 - sareptanus Balthasar, 1935 LN 0383
 TYPE DEP .. : BCP
 L/T-TYP ... : Sarepta, Rossia mer., SU.
 NOM. ST ... : val. n. sp
 TAX. POS ... : Nialus sp s.

2275 - scabriceps Leconte, 1878 LN 1803
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : Colorado, USA
 NOM. ST ... : val. n. sp
 TAX. POS ... : Mendidaphodius sp s.

2287 - dixonii Oke, 1925 LN 1878
 TYPE DEP .. :
 L/T-TYP ... : Lake Hattah, Victoria, AUS.
 NOM. ST ... : val. n. sp
 TAX. POS ... : ?Podotenus sp d.

2289 - scolytiformis Reitter, 1892 LN 1602
 TYPE DEP .. :
 L/T-TYP ... : Syrien, SYR.
 NOM. ST ... : n. sp syn.
 TAX. POS ... : = ?brahminus Harold, 1879

2299 - sculptus Hope, 1846 LN 2064
 TYPE DEP .. : BMNHL
 L/T-TYP ... : Port Phillip, AUS.
 NOM. ST ... : val. n. sp
 TAX. POS ... : Proctophanes sp s.

2300 - scutatus Petrovitz, 1961 LN 0309
 TYPE DEP .. : MCSNM
 L/T-TYP ... : Kistna D., Avanigadda, IND
 NOM. ST ... : val. n. sp
 TAX. POS ... : Mesontoplatys sp s.

2370 - similis D. Koshant., 1894 LN 0255
 TYPE DEP .. :
 L/T-TYP ... : Sintab, SU.
 NOM. ST ... : n. sp syn.
 TAX. POS ... : = sabulicola Thomson, 1868

2372 - similis Sturm, 1843 LN 2012
 TYPE DEP .. :
 L/T-TYP ... : Caucasus, SU.
 NOM. ST ... : nnu. sp
 TAX. POS ... : = punctipennis Erichson, 1848

2386 - smithi Shipp, 1897 LN 2188
 TYPE DEP .. :
 L/T-TYP ... : Higo, SD, (c).
 NOM. ST ... : val. n. ab
 TAX. POS ... : wahlbergi ab s.

2406 - sparsus Leconte, 1878 LN 1803
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : Mariposa, California, USA.
 NOM. ST ... : val. n. sp
 TAX. POS ... : Stenotothorax sp s.

2414 - spinosus D. Koshant., 1894 LN 0255
 TYPE DEP .. : ZMMUM
 L/T-TYP ... : Dshisak, Turkestan, SU, (r)
 NOM. ST ... : n. sp syn.
 TAX. POS ... : = ?hyxos Petrovitz, 1962

2431 - sticticus Hartung, 1857 LN 2152
 TYPE DEP .. :
 L/T-TYP ... : Ins. Canar., CAI.
 NOM. ST ... : n. sp syn.
 TAX. POS ... : = maculosus Wollaston, 1864

2448 - stupidus Horn, 1870 LN 0754
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : Georgia, USA.
 NOM. ST ... : val. n. sp
 TAX. POS ... : Amidorus sp s.

- 2464 - submaculatus** Sturm, 1826 LN 2612
 TYPE DEP .. :
 L/T-TYP ... : Brasilia, BR.
 NOM. ST ... : nnu. sp
 TAX. POS ... : = brasiliensis Castelnau, 1840
- 2470 - subtruncatus** Leconte, 1878 LN 1803
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : Colorado, USA.
 NOM. ST ... : val. n. sp
 TAX. POS ... : Melinopterus sp s.
- 2479 - suturalis** Redtenbacher, 1843 LN 1976
 TYPE DEP .. :
 L/T-TYP ... : Syria, SYR.
 NOM. ST ... : n. sp hom.
 TAX. POS ... : = suturinigra A. Schmidt, 1916
- 2493 - torpidus** Horn, 1870 LN 0754
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : Salt Lake, USA, (r).
 NOM. ST ... : val. n. ab
 TAX. POS ... : omissus ab t.
- 2494 - validus** Horn, 1870 LN 0754
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : Abittibi House, CDN.
 NOM. ST ... : n. sp syn.
 TAX. POS ... : = pinguis Haldeman, 1848
- 2503 - tasmaniae** Hope, 1846 LN 2064
 TYPE DEP .. : BMNHL
 L/T-TYP ... : Van Diemen's Land, AUS.
 NOM. ST ... : val. n. sp
 TAX. POS ... : Acrossidius sp t.
- 2518 - tenuistriatus** Horn, 1887 LN 1749
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : Texas, USA.
 NOM. ST ... : val. n. sp
 TAX. POS ... : Trichonotulus sp t.
- 2535 - tescorum** Semenov, 1898 LN 1028
 TYPE DEP .. :
 L/T-TYP ... : Turgajensis, Sibiria, SU.
 NOM. ST ... : n. sp syn.
 TAX. POS ... : = melanostictus W. Sch., 1840
- 2569 - tjanshanicus** Balthasar, 1956 LN 0103
 TYPE DEP .. : BCP
 L/T-TYP ... : Kara Kudschur, Naryng, CHI
 NOM. ST ... : ?val. n. m
 TAX. POS ... : vittatus m t.
- 2579 - transitus** Reitter, 1892 LN 1602
 TYPE DEP .. :
 L/T-TYP ... : Ostsibirien, SU, (r).
 NOM. ST ... : val. n. ab
 TAX. POS ... : uliginosus ab t.
- 2586 - triangulum** Pill. & Mittel., 1783 LN 1908
 TYPE DEP .. :
 L/T-TYP ... : Poseganam, Sclav., YU, (c).
 NOM. ST ... : n. sp syn.
 TAX. POS ... : = fossor Linné, 1758
- 2598 - trituberculatus** A. Sch., 1907 LN 0178
 TYPE DEP .. : x 1772
 L/T-TYP ... : - - - - -
 NOM. ST ... : nnoi. sp
 TAX. POS ... : = brevisculus Motsch., 1866
- 2618 - uliginosus** Hardy, 1847 LN 1044
 TYPE DEP .. :
 L/T-TYP ... : Berwickshire, GB, (r).
 NOM. ST ... : val. n. sp
 TAX. POS ... : Planolinus sp u.
- 2643 - uvarovi** Sem. & Med., 1927 LN 1295
 TYPE DEP .. : ZMMUM
 L/T-TYP ... : Karanogaica, f. Kuma, SU.
 NOM. ST ... : n. sp syn.
 TAX. POS ... : = hauseri Reitter, 1894
- 2701 - walshi** Horn, 1870 LN 0754
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : Illinois, USA.
 NOM. ST ... : val. n. sp
 TAX. POS ... : Drepanocanthoides sp w.
- 2738 - transcaspicus** Rakovic, 1982 LN 1480
 TYPE DEP .. : ZMHUB
 L/T-TYP ... : Golodnaja Step, Trans., SU
 NOM. ST ... : n. sp syn.
 TAX. POS ... : = tenuisculptus Reitter, 1892
- 2744 - Martinezia** Chalumeau, 1983 LN 2660
 TYPE DEP .. : - - - - -
 L/T-TYP ... : excavaticollis Blan. (od)
 NOM. ST ... : n. G hom.
 TAX. POS ... : = Martineziella Chalum., 1986
- 2753 - amplicollis** Pittino, 1984 LN 1493
 TYPE DEP .. : PMYUNH
 L/T-TYP ... : Dinajpur, Bangladesh, BA.
 NOM. ST ... : val. n. sp
 TAX. POS ... : Rhysemus sp a.
- 2789 - arnoldii** Medvedev, 1951 LN 1451
 TYPE DEP .. : ZIMANL
 L/T-TYP ... : Uraliska, Kazakhstan., SU.
 NOM. ST ... : n. sp syn.
 TAX. POS ... : = rufinus Silfverberg, 1977
- 2936 - quadripunctatus** Uddman, 1790 LN 2068
 TYPE DEP .. :
 L/T-TYP ... : Suecia, S.
 NOM. ST ... : n. sp hom.
 TAX. POS ... : = quadripunctatus Panzer, 1789

2946 - generosus Reitter, 1892 LN 1602
 TYPE DEP .. :
 L/T-TYP ... : Ordubad, Araxesthal, SU.
 NOM. ST ... : n. sp syn.
 TAX. POS ... : = nocturnus Reitter, 1892

3008 - madari Tesar, 1945 LN 0228
 TYPE DEP .. : TCO
 L/T-TYP ... : Wernyj, Turkestan, SU.
 NOM. ST ... : n. sp syn.
 TAX. POS ... : = makowskyi D. Koshant., 1891

3081 - constans Megerle, 1826 LN 2612
 TYPE DEP .. :
 L/T-TYP ... : Sudlichen Deutschland, D.
 NOM. ST ... : nnu. sp
 TAX. POS ... : = constans Duftschmid, 1805

3115 - dobrovljanskyi W. Kosh., 1913 LN 0788
 TYPE DEP .. :
 L/T-TYP ... : Erivan, Transkaukasien, SU
 NOM. ST ... : val. n. sp
 TAX. POS ... : Chilothorax sp d.

3126 - tenerus Petrovitz, 1959 LN 0292
 TYPE DEP .. : ZFMAKB
 L/T-TYP ... : Djibouti, DJ.
 NOM. ST ... : val. n. sp
 TAX. POS ... : Cinacanthus sp t.

3144 - omissus Leconte, 1850 LN 1798
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : Lake Superior, CDN.
 NOM. ST ... : val. n. sp
 TAX. POS ... : Diapterna sp o.

3145 - hyperboreus Leconte, 1850 LN 1798
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : Lake Superior, CDN.
 NOM. ST ... : val. n. sp
 TAX. POS ... : Diapterna sp h.

3234 - delirus Balthasar, 1965 LN 0246
 TYPE DEP .. : BCP
 L/T-TYP ... : Dalansatgat, Mongolei, MPR
 NOM. ST ... : n. sp syn.
 TAX. POS ... : = sordescens Harold, 1869

3242 - deserticola Med. & Nik., 1976 LN 0532
 TYPE DEP .. : ZIMANL
 L/T-TYP ... : Repeteka, Bost., Turk., SU.
 NOM. ST ... : n. sp syn.
 TAX. POS ... : = bispinifrons Reitter, 1889

3254 - bicolor Sturm, 1826 LN 2612
 TYPE DEP .. :
 L/T-TYP ... : Amer. bor., AA.
 NOM. ST ... : nnu. sp
 TAX. POS ... : = Ataenius sp?

3537 - sericatus Ziegler, 1826 LN 2612
 TYPE DEP .. :
 L/T-TYP ... : German., D.
 NOM. ST ... : nnu. sp
 TAX. POS ... : = obscurus Fabricius, 1792

3638 - arenaria Fabricius, 1787 LN 1170
 TYPE DEP .. : ?ZMUKK
 L/T-TYP ... : Sueciae, S.
 NOM. ST ... : val. n. sp
 TAX. POS ... : Aegialia sp a.

3644 - convexa Fall, 1932 LN 1212
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : Los Angeles Co., Cal., USA
 NOM. ST ... : val. n. sp
 TAX. POS ... : Aegialia sp c.

3651 - caelatus Leconte, 1881 LN 1804
 TYPE DEP .. : MCZHUC
 L/T-TYP ... : Santa Fe Canon, N.M., USA, (r).
 NOM. ST ... : n. sp syn.
 TAX. POS ... : = riparius Horn, 1871

3672 - Annegialia Howden, 1971 LN 0729
 TYPE DEP .. : - - - - -
 L/T-TYP ... : ataeniformis Howden, (od)
 NOM. ST ... : val. n. G
 TAX. POS ... : ?Aegialiini G A.

3689 - Chaetopisthes West., 1845 s.str. LN 2039
 TYPE DEP .. : - - - - -
 L/T-TYP ... : fulvus Westwood, (m).
 NOM. ST ... : val. n. Sbg
 TAX. POS ... : Chaetopisthes Sbg C.

3695 - fulvus Westwood, 1845 LN 2039
 TYPE DEP .. : UMOUO
 L/T-TYP ... : Mhow, Malwa, cent. Ind., IND
 NOM. ST ... : val. n. sp
 TAX. POS ... : Chaetopisthes sp f.

3735 - araujoi Reyes C. & Mart., 1979 LN 1128
 TYPE DEP .. : RCPCM
 L/T-TYP ... : Chiapas, Palenque, MEX.
 NOM. ST ... : val. n. sp
 TAX. POS ... : Termitodius sp a.

3737 - chaki Reyes C. & Mart., 1979 LN 1128
 TYPE DEP .. : RCPCM
 L/T-TYP ... : Chiapas, Sl. Lacandona, MEX.
 NOM. ST ... : val. n. sp
 TAX. POS ... : Termitodius sp c.

3745 - medvedevi Nikolajev, 1975 LN 0566
 TYPE DEP .. : ZIMANL
 L/T-TYP ... : Nebitdagh, SWTurkmen, SU.
 NOM. ST ... : n. sp syn.
 TAX. POS ... : = mamajevi Medvedev, 1969

3765 - desjardinsi Westwood, 1843 LN 2038
 TYPE DEP .. BMNHL
 L/T-TYP ... Insula Mauriti, MT.
 NOM. ST ... val. n. sp
 TAX. POS ... Rhyparus sp d.

3840 - bordoni Petrovitz, 1972 LN 0072
 TYPE DEP .. BCM
 L/T-TYP ... Cagua, Edo. Aragua, YV.
 NOM. ST ... val. n. sp
 TAX. POS ... Ataenius sp b.

3957 - parallelus Petrovitz, 1961 LN 0309
 TYPE DEP .. MCSNM
 L/T-TYP ... Mhamundé, Amazonas, BR.
 NOM. ST ... val. n. sp
 TAX. POS ... Ataenius sp p.

3973 - prolongatus Mulsant, 1842 LN 1861
 TYPE DEP .. ISMC
 L/T-TYP ... France, F, (c).
 NOM. ST ... n. ab syn.
 TAX. POS ... = ocellatus Mulsant, 1842

3996 - semicoecus Macleay, 1888 LN 1797
 TYPE DEP ..
 L/T-TYP ... King's Sound, AUS, (c).
 NOM. ST ... val. n. sp
 TAX. POS ... Ataenius sp s.

4044 - shannoni Bruch, 1938 LN 1608
 TYPE DEP .. MACNBA
 L/T-TYP ... Famabalasto, S. Maria, RA.
 NOM. ST ... val. n. sp
 TAX. POS ... Bruchaphodius sp s.

4057 - humeralis Leconte, 1868 LN 1803
 TYPE DEP .. MCZHUC
 L/T-TYP ... Ditroit, Michigan, USA.
 NOM. ST ... val. n. sp
 TAX. POS ... Dialytellus sp h.

4063 - bordoni Petrovitz, 1963 LN 0564
 TYPE DEP .. BCM
 L/T-TYP ... Cagua, Edo Aragua, YV.
 NOM. ST ... val. n. sp
 TAX. POS ... Euparia sp b.

4071 - nigricans Westwood, 1843 LN 2038
 TYPE DEP .. BMNHL
 L/T-TYP ... (pi).
 NOM. ST ... val. n. sp
 TAX. POS ... ?Euparia sp n.

4125 - amazonica Petrovitz, 1961 LN 0309
 TYPE DEP .. MCSNM
 L/T-TYP ... Manaus, Amazonia, BR.
 NOM. ST ... val. n. sp
 TAX. POS ... Phalangochaeta sp a.

4160 - elongatulus Macleay, 1888 LN 1797
 TYPE DEP ..
 L/T-TYP ... King's Sound, AUS, (c).
 NOM. ST ... val. n. sp
 TAX. POS ... Saproites sp e.

4172 - costatus Sturm, 1826 LN 2612
 TYPE DEP ..
 L/T-TYP ... Insel Barthel., GU.
 NOM. ST ... nnu. sp
 TAX. POS ... ?Ataenius sp?

4177 - anthracinus Sturm, 1843 LN 2012
 TYPE DEP ..
 L/T-TYP ... ?Nubia, ET.
 NOM. ST ... n. sp syn.
 TAX. POS ... = impurus Roth, 1851

4226 - occidentalis Macleay, 1888 LN 1797
 TYPE DEP ..
 L/T-TYP ... King's Sound, AUS, (c).
 NOM. ST ... val. n. sp
 TAX. POS ... Saproites sp o.

4229 - pascoei Sharp, 1876 LN 1992
 TYPE DEP ..
 L/T-TYP ... New Zealand, NZ, (c).
 NOM. ST ... n. sp syn.
 TAX. POS ... = communis White, 1846

4237 - raoulensis Broun, 1910 LN 1612
 TYPE DEP ..
 L/T-TYP ... Roul Island, NZ.
 NOM. ST ... val. n. sp
 TAX. POS ... Saproites sp r.

4241 - rugicollis Macleay, 1888 LN 1797
 TYPE DEP ..
 L/T-TYP ... King's Sound, AUS, (c).
 NOM. ST ... val. n. sp
 TAX. POS ... Saproites sp r.

4247 - sulcatissimus Broun, 1911 LN 1613
 TYPE DEP ..
 L/T-TYP ... Pitt Island, NZ.
 NOM. ST ... val. n. sp
 TAX. POS ... Saproites sp s.

4252 - suspectus Sharp, 1876 LN 1992
 TYPE DEP ..
 L/T-TYP ... New Zealand, NZ, (c).
 NOM. ST ... n. sp syn.
 TAX. POS ... = exculptus White, 1846

4344 - nearcticus Wickham, 1914† LN 2045
 TYPE DEP .. MCZHUC
 L/T-TYP ... Florissant, Colorado, USA.
 NOM. ST ... val. n. sp†
 TAX. POS ... Oxyomus fossil species

4345 - **nubigenus** Petrovitz, 1968 LN 0034
 TYPE DEP .: MHNG
 L/T-TYP ... Darjeeling, Bengalen, IND.
 NOM. ST ... val. n. sp
 TAX. POS ... Oxyomus sp n.

4351 - **kuznetzovi** Nikritin, 1971 LN 0071
 TYPE DEP .: ZMMUM
 L/T-TYP ... Repetek, Turkmenia, SU.
 NOM. ST ... n. sp syn.
 TAX. POS ... = repetekensis Nikritin, 1971

4391 - **hirtellus** Ziegler, 1826 LN 2612
 TYPE DEP .:
 L/T-TYP ... Austria, A.
 NOM. ST ... nnu. sp
 TAX. POS ... = hirtellus Castelnau, 1840

4442 - **granosus** Klug, 1842 LN 1780
 TYPE DEP .: ZMHUB
 L/T-TYP ... Senegal, SER, (c).
 NOM. ST ... val. n. sp
 TAX. POS ... Rhyssemus sp g.

4454 - **ignobilis** Endrodi, 1964 LN 1660
 TYPE DEP .: MRACT
 L/T-TYP ... Matadi, Bas Congo, ZR.
 NOM. ST ... val. n. ab
 TAX. POS ... sculptipennis ab i.

4534 - **lobatus** Broun, 1893 LN 2591
 TYPE DEP .: BMNHL
 L/T-TYP ... Taranaki, NZ.
 NOM. ST ... n. sp syn.
 TAX. POS ... = graniceps Broun, 1886

4535 - **sulcipennis** Lea, 1904 LN 2230
 TYPE DEP .: SAMA
 L/T-TYP ... Hobart, Tasmania, AUS.
 NOM. ST ... val. n. sp
 TAX. POS ... Tesarius sp s.

4578 - **ventralis** Horn, 1887 LN 1749
 TYPE DEP .: MCZHUC
 L/T-TYP ... Ontario, CDN, (r).
 NOM. ST ... val. n. sp
 TAX. POS ... Platytomus sp v.

4601 - **hydropicus** Horn, 1887 LN 1749
 TYPE DEP .: MCZHUC
 L/T-TYP ... Savannah, Ga., USA.
 NOM. ST ... val. n. sp
 TAX. POS ... Psammodius sp h.

4709 - **spissipes** Leconte, 1878 LN 1802
 TYPE DEP .: MCZHUC
 L/T-TYP ... Marquette, Michigan, USA.
 NOM. ST ... n. sp syn.
 TAX. POS ... = rufinus Silfverberg, 1977

4718 - **evanescen** Bouskell, 1901 LN 0069
 TYPE DEP .:
 L/T-TYP ... Great Britain, EA.
 NOM. ST ... n. ab syn.
 TAX. POS ... = borealis Gyllenhal, 1827

4760 - **angularis** Leconte, 1850 LN 1788
 TYPE DEP .: MCZHUC
 L/T-TYP ... Lake Superior, CDN, (c).
 NOM. ST ... n. sp syn.
 TAX. POS ... = hyperboreus Leconte, 1850

4801 - **planus** Dahl, 1833 LN 1263
 TYPE DEP .:
 L/T-TYP ... Etruria, I.
 NOM. ST ... nnu. sp
 TAX. POS ... = planus W. Schmidt, 1840

4871 - **cribrosus** Leconte, 1850 LN 1798
 TYPE DEP .: MCZHUC
 L/T-TYP ... Lake Superior, CDN, (c).
 NOM. ST ... n. sp syn.
 TAX. POS ... = striatulus Say, 1825

4912 - **rugatus** Wollaston, 1867 LN 2053
 TYPE DEP .: BMNHL
 L/T-TYP ... S. Antao, C. Verde I., (r).
 NOM. ST ... n. sp syn.
 TAX. POS ... = granosus Klug, 1842

4935 - **marginatus** Leconte, 1878 LN 1803
 TYPE DEP .: MCZHUC
 L/T-TYP ... Eastern Nevada, USA.
 NOM. ST ... n. sp hom.
 TAX. POS ... = depressiusculus A. Sch., 1907

4944 - **kitanoi** Miyake, 1982 LN 2900
 TYPE DEP .: MYCT
 L/T-TYP ... C. Sata, Ohsumi, Kyushu, J.
 NOM. ST ... val. n. sp
 TAX. POS ... Rhyparus sp k.

4945 - **Martineziella** Chalum., 1986 LN 2896
 TYPE DEP .: x 2744
 L/T-TYP ... - - - - -
 NOM. ST ... v. nno. G
 TAX. POS ... Eupariinae G M.

4960 - **isabelae** Franz, 1985 LN 2899
 TYPE DEP .:
 L/T-TYP ... Galapagos Is., ECG.
 NOM. ST ... val. n. sp
 TAX. POS ... Ataenius sp i.

4966 - **solskyi** Wilkins, 1886 LN 2217
 TYPE DEP .:
 L/T-TYP ... Taschkent, SU.
 NOM. ST ... n. sp syn.
 TAX. POS ... = morawitzi Solsky, 1876

4968 – peruanus Petrovitz, 1962 LN 0323
 TYPE DEP .: MHNG
 L/T-TYP .: Mayla, Urubamba, Peru, PE.
 NOM. ST .: val. n. sp
 TAX. POS .: Mysarus sp p.

4970 – abditus Nikritin, 1975 LN 0363
 TYPE DEP .: ZIMANL
 L/T-TYP .: Kuvsugulskije, Mong., MPR.
 NOM. ST .: val. n. sp
 TAX. POS .: Psammoporus sp a.

4975 – nanshanchicus Masum., 1977 LN 2221
 TYPE DEP .: NSMT
 L/T-TYP .: Nanshanchi, N.H., RC.
 NOM. ST .: val. n. sp
 TAX. POS .: Rhysemus sp n.

5066 – sabuleti Paykull, 1798 LN 1897
 TYPE DEP .:
 L/T-TYP .: Scaniae, S, (r).
 NOM. ST .: n. ab syn.
 TAX. POS .: v. B = rufinus Silfverberg, 1977

5146 – tenuipunctata Bordat, 1988 LN 2907
 TYPE DEP .: TMP
 L/T-TYP .: Munitum r., Kaokoveld, ZA.
 NOM. ST .: val. n. sp
 TAX. POS .: Didactylia sp t.

5237 – pumilus Horn, 1887 LN 1749
 TYPE DEP .: MCZHUC
 L/T-TYP .: New Mexico, USA.
 NOM. ST .: n. sp hom.
 TAX. POS .: = pumilio A. Schmidt, 1907

5291 – melanarius Sturm, 1826 LN 2612
 TYPE DEP .:
 L/T-TYP .: Hafnia, A.
 NOM. ST .: nnu. sp
 TAX. POS .: = lutarius Paykull, 1798

5349 – sulcatus Sturm, 1907 LN 1971
 TYPE DEP .:
 L/T-TYP .: Amer. bor., AA.
 NOM. ST .: nnu. sp
 TAX. POS .: = cylindrus Horn, 1871

5360 – psammodiiformis Cl., 1900 LN 1155
 TYPE DEP .:
 L/T-TYP .:
 NOM. ST .: n. sp mis.
 TAX. POS .: = psammodiformis Reitter, 1896

5361 – reitteri D. Koshant., 1894 LN 0254
 TYPE DEP .:
 L/T-TYP .: Westturkestan, SU.
 NOM. ST .: n. sp syn.
 TAX. POS .: = putridus Fourcroy, 1785

5366 – aurivilliusi Clouet, 1901 LN 1629
 TYPE DEP .:
 L/T-TYP .:
 NOM. ST .: n. sp is.
 TAX. POS .: = aurivillii Clouet, 1901

5404 – tshuensis Protsenko, 1979 LN 2651
 TYPE DEP .:
 L/T-TYP .: Kirgisia, SU.
 NOM. ST .: n. sp syn.
 TAX. POS .: = rectus Motschulsky, 1866

5408 – niger Cockerell, 1888 LN 2652
 TYPE DEP .:
 L/T-TYP .: Haydens, Lake Co., Col, USA.
 NOM. ST .: n. ab hom.
 TAX. POS .: = cockerelli Leng, 1918

5425 – kerzhneri Nikolajev, 1984 LN 2681
 TYPE DEP .:
 L/T-TYP .: Ara-Khangajskij, MPR.
 NOM. ST .: val. n. sp
 TAX. POS .: Pseudacrossus sp k.

5486 – nitidus Pittino, 1988 LN 2714
 TYPE DEP .: PMYUNH
 L/T-TYP .: Bas Mongoki, MGY.
 NOM. ST .: val. n. sp
 TAX. POS .: Rhysemorphus sp n.

5513 – agullasi Endrodi, 1983 LN 1478
 TYPE DEP .: TMP
 L/T-TYP .: Cape Agullas, ZA.
 NOM. ST .: val. n. sp
 TAX. POS .: Youngaphodius sp a.

b) The following items must be added:

5524 – irregularis Hope, 1839 LN 2037
 TYPE DEP .: BMNHL
 L/T-TYP .: In Mont. Himalayae, IND.
 NOM. ST .: nnu. sp
 TAX. POS .: = irregularis Westwood, 1839

5525 – nigripennis Miksic, 1962 LN 2865
 TYPE DEP .:
 L/T-TYP .: Yugoslavia, YU, (c).
 NOM. ST .: val. n. ab
 TAX. POS .: suarius ab n.

5526 – atsushii Ochi, 1986 LN 2903
 TYPE DEP .: NSMT
 L/T-TYP .: Chou Rindo, Amami-O. I., J.
 NOM. ST .: val. n. sp
 TAX. POS .: Trichaphodius sp a.

5527 – ishidai Masum. & Kiuchi, 1987 LN 2902

TYPE DEP ..: NSMT

L/T–TYP ... Jigokudani, Nagano Pr., J.

NOM. ST ... val. n. sp

TAX. POS ... Agrilinus sp i.

5528 – carri Gordon & Cart, 1988 LN 2901

TYPE DEP ..: NMNHW

L/T–TYP ... Calgary, Alberta, CDN.

NOM. ST ... val. n. sp

TAX. POS ... Aegialia sp c.

5529 – amplipunctata G. & C., 1988 LN 2901

TYPE DEP ..: NMNHW

L/T–TYP ... Ransom Co., N. D., USA.

NOM. ST ... val. n. sp

TAX. POS ... Aegialia sp a.

5530 – spinosa Gord. & Cartw., 1988 LN 2901

TYPE DEP ..: NMNHW

L/T–TYP ... Wallulah, Washington, USA.

NOM. ST ... val. n. sp

TAX. POS ... Aegialia sp s.

5531 – kelsoi Gord. & Cartw., 1988 LN 2901

TYPE DEP ..: NMNHW

L/T–TYP ... Kelso D., S. Bern. Co., USA.

NOM. ST ... val. n. sp

TAX. POS ... Aegialia sp k.

5532 – Obaphodius Bordat, 1988 LN 2907

TYPE DEP ..: - - - - -

L/T–TYP ... silvestris Bordat (od).

NOM. ST ... val. n. Sbg

TAX. POS ... Aphodius Sbg O.

5533 – silvestris Bordat, 1988 LN 2907

TYPE DEP ..: TMP

L/T–TYP ... Dwesa Forest, Transkei, ZA

NOM. ST ... val. n. sp

TAX. POS ... Obaphodius sp s.

5534 – aprilis Bordat, 1988 LN 2907

TYPE DEP ..: TMP

L/T–TYP ... Munitum r., Kaokoveld, ZA

NOM. ST ... val. n. sp

TAX. POS ... Pharaphodius sp a.

5535 – Youngaphodius Bordat, 1988 LN 2907

TYPE DEP ..: - - - - -

L/T–TYP ... agullasi Endrodi (od).

NOM. ST ... val. n. Sbg

TAX. POS ... Aphodius Sbg Y.

5536 – ruficornis Thunberg, 1814 LN 2021

TYPE DEP ..: - - - - -

L/T–TYP ... Cape Prov., ZA, (c).

NOM. ST ... val. n. sp

TAX. POS ... Aphodius Subgenere incerto

5537 – oblongus Thunberg, 1814 LN 2021

TYPE DEP ..: - - - - -

L/T–TYP ... Cape Prov., ZA, (c).

NOM. ST ... val. n. sp.

TAX. POS ... Aphodius Subgenere incerto

5538 – ochraceus Wiedemann, 1821 LN 2584

TYPE DEP ..: - - - - -

L/T–TYP ... Prom. b. sp., ZA.

NOM. ST ... val. n. sp

TAX. POS ... Aphodius Subgenere incerto

5539 – nigromarginatus Cock., 1888 LN 2652

TYPE DEP ..: - - - - -

L/T–TYP ... Haydens, Lake Co., Col, USA

NOM. ST ... val. n. ab

TAX. POS ... tenellus ab n.

5540 – rubens Olsoufieff, 1918 LN 1879

TYPE DEP ..: - - - - -

L/T–TYP ... Caucasus, SU (c).

NOM. ST ... val. n. ab

TAX. POS ... koshantschikovi ab r.

5541 – badius Sturm, 1826 LN 2612

TYPE DEP ..: - - - - -

L/T–TYP ... Gallia, F

NOM. ST ... nnu. sp

TAX. POS ... = unicolor Olivier, 1789

5542 – fulvus Melsheimer, 1826 LN 2612

TYPE DEP ..: - - - - -

L/T–TYP ... Amer. bor., AA.

NOM. ST ... nnu. sp

TAX. POS ... = Aphodius sp?

5543 – similis Sturm, 1843 LN 2012

TYPE DEP ..: - - - - -

L/T–TYP ... Amer. bor., AA.

NOM. ST ... nnu. sp

TAX. POS ... = Aphodius sp?

5544 – porcellus Sturm, 1843 LN 2012

TYPE DEP ..: - - - - -

L/T–TYP ... Amer. bor., AA.

NOM. ST ... nnu. sp

AX. POS ... = Aphodius sp?

5545 – lutulentus Melsheimer, 1826 LN 2612

TYPE DEP ..: - - - - -

L/T–TYP ... Amer. bor. AA.

NOM. ST ... nnu. sp

TAX. POS ... = lutulentus Haldeman, 1843

5546 – infuscatus Sturm, 1843 LN 2012

TYPE DEP ..: - - - - -

L/T–TYP ... Amer. bor., AA.

NOM. ST ... nnu. sp

TAX. POS ... = Aphodius sp?

5547 – lineatus Ullrich, 1826 TYPE DEP .. : L/T–TYP ... : Tergest, I. NOM. ST ... : nnu. sp TAX. POS ... : = Aphodius sp?	LN 2612	5554 – carinatus Sturm, 1843 TYPE DEP .. : L/T–TYP ... : Amer. bor., AA. NOM. ST ... : nnu. sp TAX. POS ... : = Ataenius sp?	LN 2012
5548 – denigratus Sturm, 1826 TYPE DEP .. : L/T–TYP ... : Hungaria, H. NOM. ST ... : nnu. sp TAX. POS ... : = Aphodius sp?	LN 2612	5555 – nigritulus Billberg, 1843 TYPE DEP .. : L/T–TYP ... : Amer. ins., AA. NOM. ST ... : nnu. sp TAX. POS ... : = Ataenius sp?	LN 2012
5549 – simplex Sturm, 1843 TYPE DEP .. : L/T–TYP ... : Austria, A. NOM. ST ... : nnu. sp TAX. POS ... : = Aphodius sp?	LN 2012	5556 – saucius Sturm, 1826 TYPE DEP .. : L/T–TYP ... : Amer. bor., AA. NOM. ST ... : nnu. sp TAX. POS ... : = Ataenius sp?	LN 2612
5550 – haemorrhous Sturm, 1843 TYPE DEP .. : L/T–TYP ... : Amer. bor., AA. NOM. ST ... : nnu. sp TAX. POS ... : = Aphodius sp?	LN 2012	5557 – limbatus Sturm, 1826 TYPE DEP .. : L/T–TYP ... : Amer. ins., AA. NOM. ST ... : nnu. sp TAX. POS ... : = Ataenius sp?	LN 2612
5551 – vittatus Melsheimer, 1826 TYPE DEP .. : L/T–TYP ... : Amer. bor., AA. NOM. ST ... : nnu. sp TAX. POS ... : = vittatus Say, 1826	LN 2612	5558 – rugicollis Megerle, 1826 TYPE DEP .. : L/T–TYP ... : Austria, A. NOM. ST ... : nnu. sp syn. TAX. POS ... : = laevipennis Costa, 1844	LN 2612
5552 – pallidus Parreyss, 1826 TYPE DEP .. : L/T–TYP ... : Croatia, YU. NOM. ST ... : nnu. sp TAX. POS ... : = Aphodius sp?	LN 2612	5559 – plagiatus Petrovitz, 1964 TYPE DEP .. : MHNG L/T–TYP ... : Ansongo, NR. NOM. ST ... : val. n. ab TAX. POS ... : weidholzi ab p.	LN 0291
5553 – convexus Sturm, 1843 TYPE DEP .. : L/T–TYP ... : pi. NOM. ST ... : nnu. sp TAX. POS ... : = Aphodius sp?	LN 2012	5560 – ratnapurensis Stebn., 1988 TYPE DEP .. : UZIL L/T–TYP ... : Ratnapura, CL. NOM. ST ... : val. n. sp TAX. POS ... : Pleuraphodius sp r.	LN 2953

III. TAXA CHECK LIST

Pag.	Col.	Line	
359	1	5	(4) must be: 4
359	1	18	9 must be: 8
359	1	19	?Aegialatis Kono, 1938 must be dropped
359	1	21	Annegialia must be: ?Annegialia
359	1	28	GENUS must be dropped
359	1	29	?AEGIALATIS Kono, 1938 must be dropped
359	1	30	Species: 1 must be dropped
359	1	31	*?stejnegeri Kono, 1938 must be dropped
359	1	32	ssp. ?sugiharai Kono, 1938 must be dropped
359	2	4	20 must be: 25

Pag. Col. Line

- 359 2 5 before arenaria should be: amplipunctata Gord. & Cart., 1988
- 359 2 20 ab. nigrella Brown, 1931 must be dropped
- 359 2 26 after hybrida should be: kelsoi Gord. & Cart., 1988
- 259 2 29 after magnifica should be: nigrella Brown, 1931
- 359 2 32 after punctata should be: spinosa Gord. & Cart., 1988
- 360 1 39 *SAPRINIANA* must be: ?*SAPRINIANA*
- 360 2 -- **ANNEGIALIA** and **MICRAEGIALIA** are out of alphabetical order
- 360 2 10 **ANNEGIALIA** must be: ?**ANNEGIALIA**
- 361 2 21 134 must be: 135
- 361 2 33 Aidopus must be: Aidophus
- 362 2 17 Nipponaphodius Nakane, 1959 must be dropped
- 362 2 19 after Nolicus should be: Obaphodius Bordat, 1988
- 363 1 13 after Trichonotulus should be: Youngaphodius Bordat, 1988
- 365 1 40 20 must be: 19
- 365 2 5 after *lapponum* should be: *miniatulus* Balth., 1931
- 365 2 17 miniatulus Balthasar, 1931 must be dropped
- 366 1 13 after *TRISTAPHODIUS* should be: ?*NIPPONAPHODIUS* Nakane, 1959
- 366 1 19 ardoei Landin, 1954 must be dropped
- 366 1 53 gotoi must be: ?gotoi
- 366 1 54 hasegawai must be: ?hasegawai
- 366 2 1 hayachinensis must be: ?hayachinensis
- 366 2 6 after inexpectatus should be: ishidai Mas. & Kiuc., 1987
- 366 2 17 after nemoralis should be: *ardoei* Landin, 1954
- 367 1 36 trituberculatus A. Sch., 1907 must be: breviusculus Motsch., 1866
- 367 1 37 *breviusculus* Motschulsky, 1866 must be: *trituberculatus* A.Schmidt, 1907
- 367 2 40 1833 must be: 1836
- 368 1 1 *SUGENUS* must be: *SUBGENUS*
- 368 1 21 *sericatus* Ziegler, 1833 must be dropped
- 368 1 23 ?1918 must be: 1918
- 368 1 29 after *lutulentus* should be: *lutulentus* Melsheimer, 1826
- 368 1 36 after *sericatus* should be: *sericatus* Ziegler, 1826
- 369 1 47 10 must be: 8
- 369 1 48 alatavicus Nikolajev, 1974 must be dropped
- 369 2 3 bartosi Balthasar, 1938 must be dropped
- 370 2 22 after irregularis should be: *irregularis* Hope, 1839
- 370 2 35 mulcibar must be: mulciber
- 371 2 12 66 must be: 65
- 371 2 15 agullasi Endrodi, 1983 must be dropped
- 373 2 56 after hyxos should be: ?*spinosus* D.Kosh., 1894
- 374 1 26 after *badius* should be: *badius* Sturm, 1826
- 374 2 13 81 must be: 80
- 375 1 56 Hartig, 0000 must be: Hartung, 1857
- 375 2 29 after *pillularius* should be:
tescorum Semenov, 1898
transformis Balthasar, 1965
- 376 2 21 *tescorum* Semenov, 1898 must be dropped
- 376 2 22 *transformis* Balthasar, 1965 must be dropped
- 376 2 46 tenerum must be: tenerus

Pag. Col. Line

- 378 2 15 cognatus and its synonyms are out of alphabetical order and must be put after clarissimus
- 378 2 45 after alaiensis should be: *nasalis* D.Kosh., 1894
- 379 1 35 *tychypus* must be: *tachypus*
- 379 1 53 sututinigra must be: suturinigra
- 382 2 15 secundus must be: secundus
- 382 2 19 after *ukrainicus* should be: ab. nigripennis Miksic, 1962
- 383 1 4 11 must be: 10
- 383 1 17 *nasalis* D.Koshantschikov, 1894 must be dropped
- 384 1 14 after *laeviceps* should be: *similis* D.Kosh., 1894
- 384 1 21 1833 must be: 1826
- 384 1 49 29 must be: 28
- 384 1 50 *adolfischmidt* Reitter, 1909 must be dropped
- 384 2 3 after *brancsiki* should be: *adolfischmidt* Reitter, 1909
- 384 2 40 *wedholzi* must be: *weidholzi*
- 384 2 41 after *weidholzi* should be: ab. *plagiatus* Petrovitz, 1964
- 384 2 46 55 must be: 53
- 385 1 4 after *bispinifrons* should be: *deserticola* Med. & Nikr., 1976
- 385 1 15 *deserticola* Med. & Nikr., 1976 must be dropped
- 385 1 32 *kuznetzovi* Nikritin, 1971 must be dropped
- 385 2 4 after *repetekensis* should be: *kuznetzovi* Nikr., 1971
- 387 2 45 after ?*makowskyi* should be:
bartosi Balthasar, 1938
alatavicus Nikol., 1974
madari Tesar, 1945
- 388 1 3 27 must be: 26
- 388 1 37 *similis* D. Koshant., 1894 must be dropped
- 388 1 50 after *rakovici* should be:
SUBGENUS
OBAPHODIUS Bordat, 1988
Species: 1
**silvestris* Bordat, 1988
- 388 2 31 1843 must be: 1826
- 388 2 34 1869 must be: 1826
- 390 2 1 after *costalis* should be: *jakovlevi* W.Kosh., 1912
- 390 2 22 after *diversus* should be: *tshuensis* Prots., 1979
- 391 1 46 100 must be: 101
- 391 1 49 after *aegyptiacus* should be: *aprilis* Bordat, 1988
- 392 2 43 24 must be: 22
- 392 2 44 before *arenarius* should be: **putridus* Fourcroy, 1785
- 392 2 45 **arenarius* must be: *arenarius* Olivier, 1789
- 392 2 47 after *pusillus* should be: *reitteri* D.Kosh., 1894
- 393 1 1 *burgaltaicus* Csiki, 1901 must be dropped
- 393 1 3 after *culminarius* should be: *burgaltaicus* Csiki, 1901
- 393 1 22 *reitteri* D.Koshantschikov, 1894 must be dropped
- 393 1 32 after *errans* should be: *evanescens* Bouskell, 1901
- 393 1 38 **putridus* Herbst, 1789 must be: **uliginosus* Hardy, 1847
- 393 1 39 *biguttatus* Dahl, 1833 must be: *foetidus* v. B Paykull, 1798

Pag. Col. Line

- 393 1 40 *fasciatus* Olivier, 1789 must be: ?*sus* Kugelan, 1792
- 393 1 41 *foetidus* Fabricius, 1792 must be: ab. *putridus* Herbst, 1789
- 393 1 42 *hirundinarius* Gistel, 1857 must be: *biguttatus* Dahl, 1833
- 393 1 43 *putridus* Fourcroy, 1785 must be: *fasciatus* Olivier, 1789
- 393 1 44 *vitulinus* Gistel, 1857 must be: *foetidus* Fabricius, 1792
- 393 1 45 ab. *transitus* Reitter, 1892 must be: *hirundinarius* Gistel, 1857
- 393 1 46 *evanescens* Bouskell, 1901 must be: *vitulinus* Gistel, 1857
- 393 1 47 *foetidus* v. G Paykull, 1798 must be: ab. *transitus* Reitter, 1892
- 393 1 48 *quadriguttatus* Tams, 1833 must be: *foetidus* v. G Paykull, 1798
- 393 1 49 ab. *uliginosus* Hardy, 1847 must be: *quadriguttatus* Tams, 1833
- 393 1 50 *foetidus* v. B Paykull, 1798 must be dropped
- 393 1 51 *sus* Kugelan, 1792 must be dropped
- 393 2 4 after *niger* should be: ab. ?*nigromarginatus* Cockerell, 1888
- 393 2 7 after *vittatus* should be: *vittatus* Melsheimer, 1826
- 394 1 46 73 must be: 75
- 395 1 5 after *pygmaeus* should be: *ratnapurensis* Stebnicka, 1988
- 395 1 19 after *subteter* should be: *sulcipennis* Boheman, 1857
- 395 1 36 11 must be: 12
- 395 1 38 after *callabonnensis* should be: ?*dixoni* Oke, 1925
- 395 2 7 29 must be: 26
- 395 2 21 *jakovlevi* W.Koshant., 1912 must be dropped
- 395 2 26 after *fimicola* should be: ab. *rubens* Olsoufieff, 1918
- 395 2 28 *madari* Tesar, 1945 must be dropped
- 396 1 10 *tshuensis* Protsenko, 1979 must be dropped
- 396 2 22 1843 must be: 1826
- 396 2 27 **SIGORIUS** must be: **SIGORUS**
- 398 1 45 1843 must be: 1826
- 398 2 1 65 must be: 66
- 398 2 3 after *assamensis* should be: *atsushii* Ochi, 1986
- 399 1 17 *opistius* must be: *opisthius*
- 399 2 48 after *villiersi* should be:
- SUBGENUS*
- YOUNGAPHODIUS** Bordat, 1988
- Species: 1*
- **agullasi* Endrodi, 1983
- 400 1 2 22 must be: 24
- 400 1 10 *dixoni* Oke, 1925 must be dropped
- 400 1 16 after *minatorius* should be:
- oblongus* Thunberg, 1814
- ochraceus* Wiedemann, 1821
- 400 1 21 after *rendalli* should be: *ruficornis* Thunberg, 1814
- 400 1 30 17 must be: 16
- 400 1 36 ?*fossor* Robert, 1838† must be dropped
- 400 2 4 41 must be: 50
- 400 2 11 *bicolor* Sturm, 1982 must be dropped
- 400 2 15 after *cognatus* should be: *convexus* Sturm, 1843
- 400 2 16 after *costalis* should be: *denigratus* Sturm, 1826
- 400 2 24 after *fulvus* should be: *fulvus* Melsheimer, 1826

Pag. Col. Line

- 400 2 25 after haemorrhous should be: haemorrhous Sturm, 1826
 400 2 26 after indicus should be: infuscatus Sturm, 1843
 400 2 27 after ljunstedti should be: lineatus Ullrich, 1826
 400 2 35 after ornatulus should be: pallidus Parreyss, 1826
 400 2 36 after planulus should be: porcellus Sturm, 1843
 400 2 42 after rutilus should be:
 similis Sturm, 1843
 simplex Sturm, 1843
 401 1 35 10 must be: 9
 403 1 9 2 must be: 1
 403 1 10 solskyi Wilkins, 1886 must be: *solskyi* Dokhtouroff, 1887
 403 1 11 *solskyi* Dokhtouroff, 1887 must be: *solskyi* Wilkins, 1886
 403 1 20 27 must be: 26
 403 1 27 *costatus* Sturm, 1982 must be dropped
 403 1 43 nibigenus must be: nubigenus
 403 2 3 sulcipennis Boheman, 1857 must be dropped
 404 1 3 4 must be: 3
 404 1 7 uvarovi Sem. & Medv., 1927 should be: *uvarevi* Sem. & Medv., 1927
 404 2 26 31 must be: 32
 405 1 14 after rosickyi should be: tenuipunctata Bordat, 1988
 406 1 6 *SUPERFAMILY* must be: *SUBFAMILY*
 406 1 9 1847 must be: 1845
 406 1 15 1847 must be: 1845
 406 1 17 1847 must be: 1845
 406 1 22 1847 must be: 1845
 406 1 25 1847 must be: 1845
 407 2 11 Iapurea must be: Iarupea
 407 2 31 Simogonious must be: Simogonius
 408 1 27 320 must be: 321
 410 1 18 after jamaicensis should be: isabelae Franz, 1985
 412 1 36 16 must be: 21
 412 1 38 after anthracinus should be: bicolor Sturm, 1826
 412 1 40 after cinerascens should be: carinatus Sturm, 1843
 412 1 41 after corticalis should be: costatus Sturm, 1826
 412 2 2 after interstitialis should be: limbatus Sturm, 1826
 412 2 5 after monticola should be: nigritulus Billberg, 1843
 412 2 6 after operator should be: saucius Sturm, 1826
 413 1 36 1847 must be: 1843
 414 1 20 after *GENUS* should be: **MARTINEZIELLA** Chalumeau, 1986
 414 1 21 **MARTINEZIA** Chalumeau, 1983 must be: *MARTINEZIA*, Chalumeau, 1983
 418 2 7 after transcaspicus should be: *nox* Iablokov, 1971
 419 1 30 49 must be: 48
 419 2 17 generosus Reitter, 1892 must be dropped
 419 2 30 after *rugicollis* should be: *rugicollis* Megerle, 1826
 419 2 40 after *brevior* should be: *generosus* Reitter, 1892
 421 2 40 10 must be: 8
 421 2 44 *nox* Iablokov, 1971 must be dropped
 422 1 8 after *opacus* should be: *transcaspicus* Rakovic, 1982

Pag.	Col.	Line	
422	1	11	transcaspicus Rakovic, 1982 must be dropped
422	1	41	arivilliusi must be: aurivillii
422	1	42	aurivillii must be: aurivilliusi
425	1	6	46 must be: 47
425	1	21	1847 must be: 1843
425	1	25	after isidroï shoud be: kitanoi Miyake, 1982
426	1	25	6 must be: 5
426	1	31	medvedevi Nikolajev, 1975 must be: medvedevi Nikolajev, 1975
426	1	39	Plania must be: Palnia

IV. COLLECTIONS & ACRONYMS

Page 431	Line 30	after Mississippi ... should be: Miyake Y. Collection. Tokyo.: MYCT
" 433	" 29	P.I.M.E. ... must be dropped
" 433	" 30	P.I.M.E. ... must be dropped
" 433	" 40	after Regional ... should be: Reyes-Castillo P. Collection. Mexico City. : RCPCM

V. ACRONYMS & COLLECTIONS

Page 438	Line 22	CW must be: FCW
" 438	" 22	G. must be: H.
" 440	" 31	after MSUS ... should be: MYCT: Miyake Y. Collection. Tokyo.
" 441	" 35	PEMD ...must be dropped
" 441	" 36	PIMEM ... must be dropped
" 441	" 43	after RCP ... should be: RCPCM: Reyes-Castillo P. Collection. Mexico City.

VII. ABBREVIATIONS & STATES

Page 452	Line 26	ISLANS must be: ISLANDS
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PART II

CONTENTS

Page 3	Line 18	(1) must be: 5
" 3	" 24	Publisched must be: Published
" 3	" 24	(1977) must be: (1987)

VIII. BIBLIOGRAPHY

Pag.	Line	
7	31	the item 2770 must be modified as follow:
AVILAJ.M.&PASCUAL F.,1988—Contribucion al conocimiento de los escarabeidos coprophagos de Sierra Nevada: (III Distribucion altitudinal y temporal. <i>Boll. Mus. reg. Sci. nat.</i> , Torino, 6: 217-240. LN 2770		

Pag. Line

- 12 15 *esspece* must be: *espece*
 15 45 *Bull*, must be: *Bull.*,
 17 2 1449 must be: 1492
 17 29 386 must be: 1386
 20 11 *Con* must be: *Con.*
 20 11 ..., must be: Hartford,
 21 32 BARAKOWSKI must be: BURAKOWSKI
 25 43 *vodyashikhsya* must be: *vodyatshikhsya*
 25 43 *okrestnostyakh* must be: *okresnostyakh*
 25 44 1:...-... must be: 10: 147-204
 26 2 264 must be: 424
 26 3 after Island should be: (Cheju-do)
 26 4 after Korea should be: Insecta Coleoptera Scarabaeidae
 26 4 2 must be: 10
 26 5 623 must be: 617
 30 50 *neew* must be: *new*
 31 30 67: ...-... must be: 67: 1-229
 41 25 16: ...-... must be: 16: 1-316
 45 15 GUITIERREZ must be: GUTIERREZ
 46 5 *coprophagus* must be: *coprophagous*
 49 5 *Oeningengs* must be: *Oeningens*
 49 8 *Wein* must be: *Wien*
 49 13 *Wein* must be: *Wien*
 49 28 HELLIWIG must be: HELLWIG
 50 8 HEYDEN C. must be: HEYDEN L.
 52 13 *Phanomen* must be: *Phaenomen*
 52 13 *Massifs Refuge* must be: *Massifs de Refuge*
 52 17 *oxid* must be: *oxide*
 52 19 *rifipes* must be dropped
 53 49 *Scabatermes* must be: *Scarabatermes*
 55 1 In Olivier's: must be: Olivier's
 55 31 *Ruuslands* must be: *Russlands*
 57 37 after Sudong-myeon should be a comma
 57 39 KIM J.I. must be KIM J.I. & CHANG K.S.
 58 4 15 must be: 1
 58 31 *Insecten doubletten* must be: *Insectendoubletten*
 59 24 *Zenntral* must be: *Zentral*
 61 14 1 must be: 3
 63 3 the item 2501 must be modified as follow:
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 63 13 the item 0262 must be modified as follow:
 LATREILLE P.A., 1822 — *Aphodie.* In: *Dictionnaire Classique d'Histoire naturelle.* Paris, 1: 1–465. LN **0262**
 63 17 LAXMAMANN must be: LAXMANN
 65 8 1, 1-824 must be: 1: 1-824
 68 28 *Scarabaeinae* must be: *Scarabaeidae*
 69 36 *problem* must be: *problems*
 69 37 ..., must be: Washington,
 71 13 the item 2892 must be modified as follow:
 * MENETRIES E., 1851 — *Die Insekten.* In: *Middendorff's Reise in dem aussersten Norden und Osten*
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 73 47 20 must be: 27
 74 37 *non reconnues* must be: *nonreconnues*
 74 38 *Scarabaeides* must be: *Scarabeides*
 75 42 *cummunity* must be: *community*
 77 28 *Islanda* must be: *Islands*

Pag. Line

- 78 22 6 must be: 5
 80 24 asiatique must be: asiatiques
 80 29 Orphini must be: Orphnini
 80 29 e must be: et
 87 48 International en must be: Internationalen
 87 49 moglirhst must be: moglichst
 89 16 speciement must be: specimens
 89 48 ..., must be: Cambridge, Ma.,
 90 2 2: ...-... must be: 2: 80-86
 91 14 Medidius must be: Mendidius
 97 11 Soc., 15 must be: Soc., New York, 15
 97 18 SCHAEFFENBERGER must be: SCHAEERFFENBERG
 99 29 In: must be: In
 100 24 the item 1978 must be modified as follow:
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 101 9 Ostereich must be: Ostreich
 101 44 Washington must be: New York
 103 29 SIEGEL M.M.J., must be: SIEGEL M.M.J., 1866
 103 29 LN 1966 must be: LN 1996
 105 20 Scarabaeoidae must be: Scarabaeoidea
 106 28 *Auk*, ... must be: *Auk*, Cambridge, Ma.,
 106 29 series must be: Series
 106 29 proposition must be: propositions
 108 18 *Auk*, 69 must be: *Auk*, Cambridge, Ma., 69
 110 34 and following, WASSMAN must be: WASMANN
 114 37 the item 2826 must be modified as follow:
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SYNOPTIC TABLE

Superfamily	Families (1)	Subfamilies	Tribus	Genera	†	Subgenera	Species	†	Total taxa
SCARABAEOIDEA	AEGIALIIDAE		AEGIALIINI	8			56	1	68
			EREMAZINI	1			5		7
	APHODIIDAE	APHODIINAE	APHODIINI	28	1	135	1723	18	1908
			DIDACTYLIINI	11			64		76
		CORYTHODERINAE		5		7	34		47
		EUPARIINAE		38		2	594		635
		ODOCHILINAE		1			9		11
		PSAMMODIINAE	PSAMMODIINI	13			119		134
	AULONOCNEMIDAE TERMITOTROGIDAE	RHYPARINAE	RHYSSEMINI	11			285		297
				2			47		50
		TERMITODERINAE		6			14		21
		THYNORICTERINAE		1			5		7
				4			50		55
				2			7		10
1	4	8	6	131	1	144	3012	19	3326 (2)

1) Herein dealt.
2) Only valid names till species level (total recorded names: 5560).

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My grateful thanks are due to those entomologists who kindly wrote me calling my attention on the errors contained in the work previously published.

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CURCULIONIDI NUOVI O POCO CONOSCIUTI
DELLA CATENA HIMALAIANA (*)

(Coleoptera)

Grazie alla cortesia dell'ing. H. Schmutzenhofer di Schönbrunn (Vienna), ho potuto studiare un piccolo lotto di Curculionidi provenienti dalle regioni himalaiane, particolarmente dal Bhutan. Qui vengono esposti i risultati relativi ai Molytinae (= Hylobiinae) ed ai Cossoninae.

Ringrazio cordialmente l'ing. Schmutzenhofer per l'invio di questo interessante materiale e per avermi permesso di trattenere parte di esso per la mia collezione (tipi compresi). Un ringraziamento altresì al collega dr. R.T. Thompson del British Museum (Nat. Hist.) per l'invio di materiali tipici di *Rhyncolus himalayensis* Stebb., *Eremotes sikkimensis* Mshl. e *Dyscerus furcatus* Mshl. nonché vari altri materiali relativi ai generi *Hylobitelus* Reitter, *Pagiophloeus* Faust e *Dyscerus* Faust.

Aclees pseudocribratus n. sp. (Figg. 1 - 4)

Loc. tip.: Madyan, Pakistan.

Materiale esaminato: 3 esemplari etichettati « N.W. Pakistan, prov. Swat, 71°90' long., 35°70' lat., Madyan m 1400, am licht, 4-9.VI.1971, leg. C. Holzschuh ».

Diagnosi — Specie vicina ad *A. cribratus* Gyll. per sagoma e dimensioni. Ne differisce per il pronoto più fortemente rugoso - varioloso, per il rostro più fortemente punteggiato - striato - rugoso (in *cribratus* la punteggiatura è profonda ma spaziata e gli intervalli tra i punti sono lisci) per il 1° ed il 2° articolo del funicolo più corti e meno tomentosi, per la clava dal 1° articolo ben separato dal 2°, per le elitre ad interstrie careniformi (piane in *cribratus*) con setole chiaramente più lunghe, di color giallo, per il metasterno e gli urosterniti sparsamente punteggiati (quasi del tutto lisci in *cribratus*). *A. conicollis* Desbr. (Sikkim), in base alla descrizione, differisce dalla n. sp. per diversi caratteri quali il pronoto tronco - conico con grossissimi punti quadrati (simili a quelli delle elitre), per la presenza di lobi oculari e per la clava con gli articoli 2° - 3° nettamente separati (fusi invece sia in *cribratus* sia in *pseudocribratus*). Da *A. pacca* F. differisce per il capo non setoloso - squamoso, la fossetta frontale molto grande e profonda, le antenne

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non setolose, il protorace lungo quanto largo (più lungo che largo in *A. pacca*), lo scutello non setoloso, le elitre non trisinuate alla base ecc. Da *A. taiwanensis* Kôno, la n. sp. differisce per il pronoto più stretto, più varioloso, per le elitre pure più strette con interstrie careniformi ed i punti delle strie più piccoli e fitti.

Misure dell'holotypus — Lunghezza del corpo: con il rostro mm 16,0. Pronoto + elitre mm 13,5. Pronoto: lunghezza alla linea mediana mm 3,3; larghezza massima mm 3,5. Elitre: lunghezza alla sutura mm 10,0; larghezza massima mm 5,6. Antenne: scapo mm 2,0; funicolo mm 3,0; clava mm 1,1.

Descrizione dell'holotypus — Nero, subopaco con rostro, pronoto ed elitre variolose, interstrie sparsamente setolose. Rostro robusto, cilindrico, leggermente allargato all'apice, con robusta punteggiatura variolosa, ai lati ordinata in scanellature al di sopra delle scrobe. Scrobe profonde, dirette sotto il rostro, visibili dall'alto solo nella porzione iniziale. Mandibole robustissime, tridentate che, se chiuse, coprono tutto il quadro boccale. Antenne inserite nel quarto distale del rostro; scapo cilindrico, appena ingrossato distalmente che raggiunge, all'indietro, il margine anteriore dell'occhio; funicolo compatto con i primi due articoli allungati, subeguali (Fig. 4), restanti moniliformi, via via allargati, brillanti, sparsamente setolosi (tranne il 7° coperto di fine peluria grigia); clava lunghissima, ricoperta di peluria vellutata, 1° articolo lungo appena 1/3 del 2°. Occhi ovaliformi, piatti. Fronte più stretta del rostro con fossetta mediana. Capo inferiormente con fitte, sottili rughe trasversali. Scutello nudo, brillante. Pronoto conico, lungo quanto largo, fortemente varioloso, massima ampiezza nel 1/3 basale. Elitre più larghe del pronoto, variolosamente striate, omeri sporgenti, con punti delle strie quadrati, strie nettamente più larghe delle interstrie, queste careniformi, sparsamente punteggiate, sparsamente setolose e con setole reclinate. Zampe robustissime, femori sparsamente punteggiati-setolosi; profemori ottusamente, meso e metafemori acutamente dentati, 1°-2° articolo dei tarsi conici, 3° fortemente bilobo, onichio lunghissimo. Procoxe coniche, fortemente rilevate, contigue alla base, mesocoxe più larghe, meno rilevate, separate da uno spazio pari a circa 1/2 diametro della coxa stessa. Urosterniti a sutura non saldata, 1° e 2° urosternite leggermente incavati in mezzo, 3° e 4° di poco più stretti del 2°.

Descrizione dei paratipi — Praticamente identici al tipo.

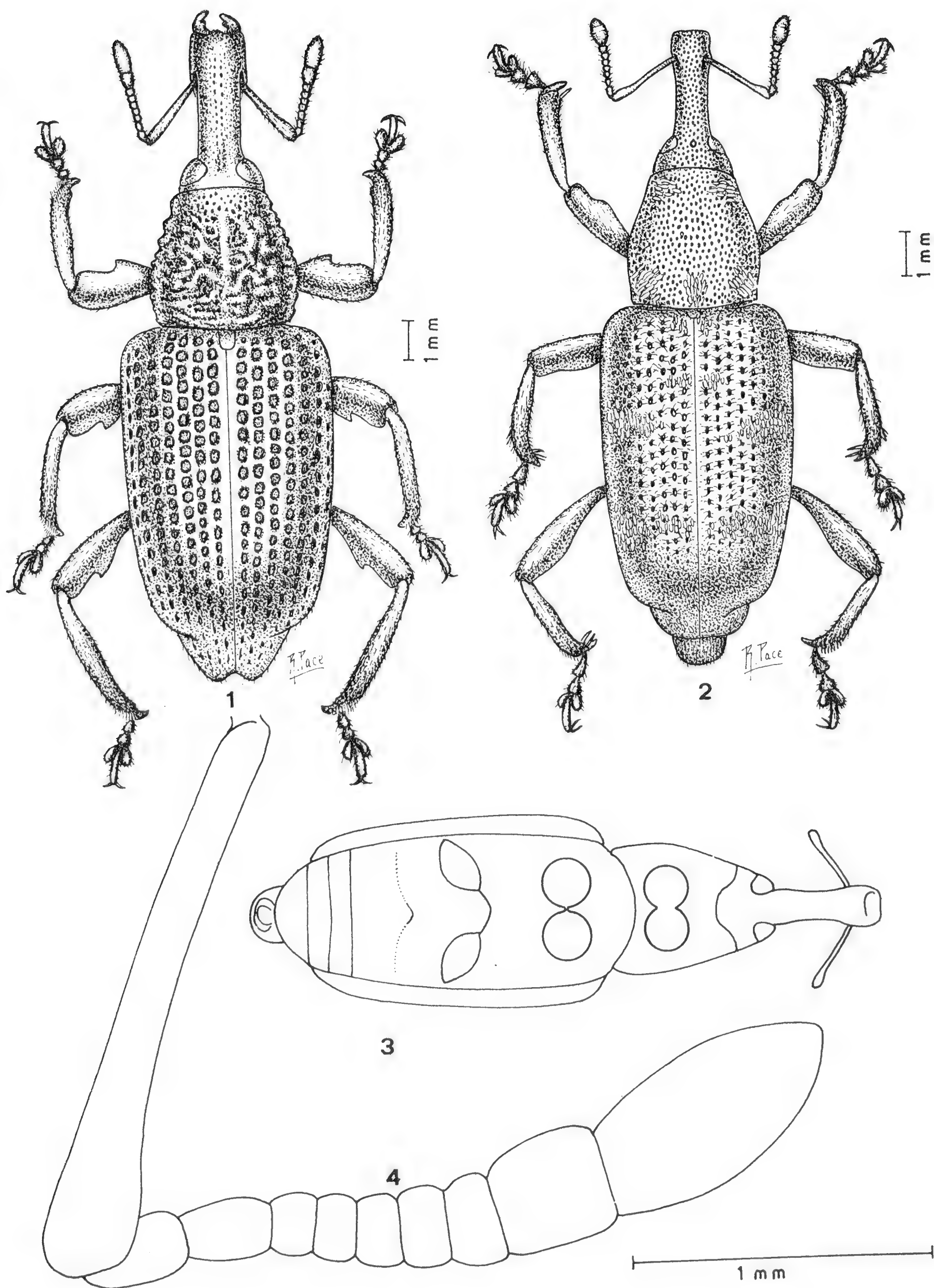
Derivatio nominis — Il nome sta ad indicare le affinità della nuova specie.

Note ecologiche — I tre esemplari sono stati raccolti alla luce. Questo fatto sembra essere una caratteristica costante di molti *Aclees*, in particolar modo del gruppo *cribratus* Gyllh.

***Hylobitelus chenkupdorjii* n. sp. (Figg. 2 - 3, 5 - 8)**

Loc. tip.: Chiley-là, W. Bhutan.

Materiale esaminato: 2 esemplari etichettati « W. Bhutan, Chiley-là, 4.VI.1986, leg. Schmutzenhofer »; idem, 2 esemplari, stessa località, m 2900, 30.VI.1987; idem, 11 esemplari, stessa località, m 3000, 18.VIII.1987; idem, 2 esemplari etichettati « W. Bhutan, Thymphy, 12.I.1988, leg. Schmutzenhofer »; idem, 1 esemplare, stessa località, m 2800, 30.VI.1986; idem, 1 esemplare etichettato « W. Bhutan, Changang, 7.X.1986, leg. Schmutzenhofer »; idem, stessa località, 1 esemplare datato X.1986. Holotypus ♂: scelto tra gli esemplari di Chiley-là.



Figg. 1 - 4 — *Aclees pseudocribratus* n. sp., Madyan, Pakistan, holotypus: habitus (1), antenna (4). *Hylobitelus chenckupdorjii* n. sp. paratypus, Chiley-là, W. Bhutan: habitus (2) e schematico dal ventre (3).

Diagnosi — Affine ad *Hylobitelus* (*Hylobius* auct.) *angustus* Fairm. (Simla, Punjab) ma facilmente separabile per i tegumenti di un bel rosso vivo (rosso bruno in *angustus*) con squamulatura concentrata in due fasce sì da lasciare (a differenza di *angustus*) scoperte gran parte delle elitre; queste con punteggiatura più grande e variolosa che in *angustus* con punti delle strie elitrati subquadrati all'altezza dello scutello e allungati e rettangolari sul disco, per il funicolo più corto e robusto, per i profemori meno fortemente dentati, per le metatibie più arcuate sul margine interno e per l'edeago leggermente più ristretto all'apice con una debole sporgenza mediana (subquadrato in *angustus*).

Misure dell'holotypus — Lunghezza complessiva del corpo: con il rostro mm 14,5. Pronoto + elitre mm 11,1. Pronoto: lunghezza alla sutura mm 7,7; larghezza massima mm 4,4. Antenne: scapo mm 1,7; funicolo mm 1,3; clava mm 0,65.

Descrizione dell'holotypus — Tegumenti uniformemente di colore rosso vivo ma con antenne, occhi e margine anteriore del pronoto più scuri. Alato. Rostro cilindrico, fortemente punteggiato, con punti ordinati in strie longitudinali, carena mediana liscia, appena rilevata; all'apice si presenta leggermente appiattito ed allargato. Scrobe brillanti, parzialmente visibili dall'alto; posteriormente esse raggiungono la parte inferiore degli occhi senza tuttavia toccarli. Antenne robuste e brevi, scapo ingrossato all'apice, primi due articoli del funicolo conici, allungati, 1° lungo 1,5 il 2°; 3° - 6° sferici, via via leggermente ingrossati, 7° trasverso; clava ellittica, robusta, composta di quattro articoli distinti (di cui i primi due più grandi e di larghezza subeguale). Fronte tra gli occhi nettamente più stretta del rostro alla base, con una fossetta mediana evidente. Occhi piani, subellittici. Protorace con lobi oculari evidenti, più lungo che largo, massima ampiezza a metà, subparallelo alla base, ristretto vistosamente invece sul margine anteriore, con robusta punteggiatura composta di punti di varie dimensioni. Nella parte mediana basale ed ai lati sono presenti lunghe setole chiare aderenti ai tegumenti. Scutello rotondo, non infossato. Elitre nettamente più larghe del pronoto con omeri fortemente sporgenti, strie con forte punteggiatura, più grande e robusta nella zona del disco con due fasce di squame chiare, la prima frammentata nel 1/3 anteriore, la seconda, più estesa, nel terzo posteriore. Pigidio coperto dalle elitre ma rivestito di lunghe setole. Zampe robuste, femori dentati (metafemori più acutamente), tibie leggermente rigonfie sul margine interno e rettilinee lungo quello esterno; tarsi setolosi con 3° articolo fortemente bilobo e "feltrito" inferiormente. Coxe anteriori coniche e fortemente rilevate, subcontigue alla base, coxe mediane anch'esse coniche, meno evidenti, leggermente separate; coxe metatoraciche separate da uno spazio pari almeno al diametro della coxa stessa, poco rilevate. Addome sparsamente setoloso, urosterni 1° e 2° larghi, subeguali per ampiezza, saldati alla sutura, 3° e 4° più stretti, con sutura non saldata. Edeago: Figg. 5 - 8.

Descrizione dell'allotipo e dei paratipi — La ♀ allotipica è praticamente indistinguibile dal ♂. I restanti paratipi si distinguono dal tipo per le dimensioni (comprese tra 12,3 e 15,5 mm), per il colore più chiaro o più scuro dei tegumenti, per la presenza talvolta di una piccola carena mediana sul pronoto e l'evidenza della squamulatura elitratale.

Derivatio nominis — La specie è dedicata al dr. Dasho Chenckup Dorjii, segretario della Commissione Pianificatrice e primo Direttore Generale delle foreste

del Bhutan che, in varia maniera, insieme al dr. Dasho Paljor Dorjii, ha aiutato l'ing. H. Schmutzenhofer nelle sue ricerche sull'entomofauna delle foreste nepalesi.

Note biologiche ed ecologiche — Tutti gli esemplari furono raccolti in « bark traps of *Picea spinulosa*, elevation 2800 - 3100 m in the mixed conifer belt, Chiley-là, Paro district. *Hylobius* (= recte, *Hylobitelus*) injury was observed on the local blue pine and hemlock mostly. Spruce and fir was less attacked » (Schmutzenhofer, 29.VII.1987, in litt.).

Osservazione — Secondo MORIMOTO (1982), specie tipica del genere *Hylobius* Germar, 1817 è *Rhynchaenus pineti* (Fabricius, 1792) (= *Curculio piceus* De Geer, 1775). Pertanto *Hypomolyx* Le Conte, 1876, ne è sinonimo. Tutti gli altri *Hylobius* sensu AA., sono da attribuirsi al genere *Hylobitelus* Reitt., 1923, descritto dall'autore boemo per includere *H. verrucipennis* Boheman del Caucaso e delle regioni pontiche di Turchia.

Sempre secondo MORIMOTO (l.c.) sia *Hylobitelus* Reitt. sia *Poyaumbus* Kôno, 1934, sono stati creati per accogliere le specie brachittere del vecchio genere *Hylobius* sensu AA. Tale affermazione non è evidentemente generalizzabile poiché il brachitterismo è stato da me riscontrato solo in *H. verrucipennis* mentre ali ben sviluppate sono presenti, oltre che nella n. sp., anche in *H. angustus*, *H. abietis* ed *H. transversusvittatus*. Tuttavia mentre le elitre in *H. piceus* sono semplicemente accostate alla sutura, in *H. abietis* ed in *H. transversusvittatus* sono invece incastrate come in *H. verrucipennis*. L'elitra sinistra infatti è conformata a formare una stretta fessura entro cui si inserisce l'elitra destra. E' pertanto possibile che anche queste entità si comportino come le specie attere.

***Dyscerus paljor dorjii* n. sp. (Figg. 9 - 10)**

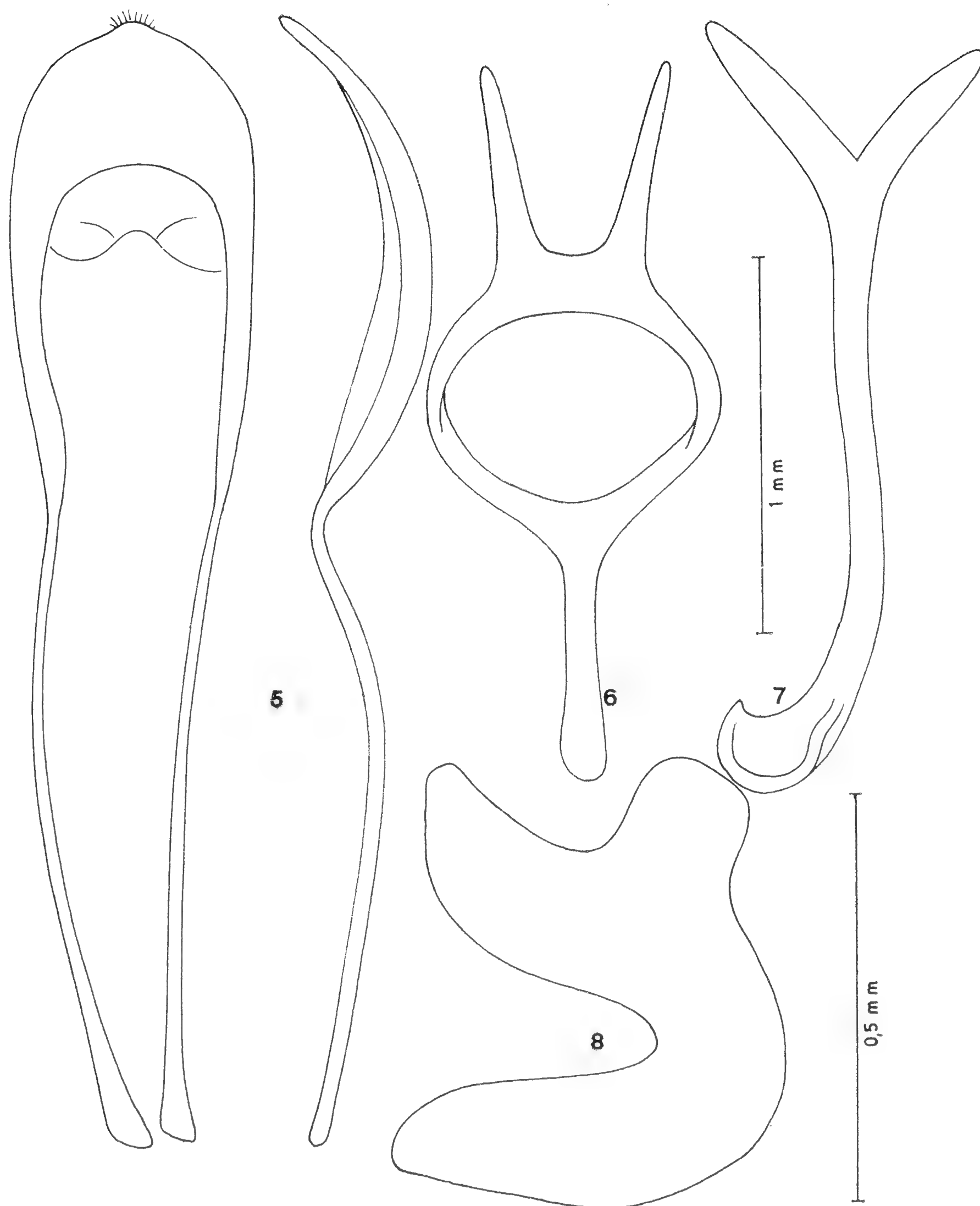
Loc. tip.: Chiley-là, W. Bhutan.

Materiale esaminato: Holotypus ♂ etichettato « West Bhutan, distr. Paro, 3000 m, Chiley-là, 18.VIII.1987, leg. H. Schmutzenhofer »; idem, 1 ♂, 1 ♀ etichettati « Bhutan, Chiley-là, 2900 m, 30.VI.1987, leg. H. Schmutzenhofer »; idem, 1 ♀ etichettata « Bhutan, Bunthsung, 28.V.1986, leg. H. Schmutzenhofer ».

Diagnosi — Un *Dyscerus* che, per l'edeago fortemente allungato, si avvicina soprattutto a *D. orientalis* (Motsch.); si differenzia facilmente per la vestitura elitale, per i tubercoli del pronoto irregolarmente distribuiti e superiormente spianati, per le interstrie 3° - 5° più rilevate delle pari (in *orientalis* solo la seconda è più rilevata delle altre), per le elitre ed il pronoto con macchie di setole giallastre regolarmente distribuite (condensate in fasce interrotte in *orientalis*) e per l'edeago più lungo e ad apice appuntito (arrotondato - subtroncato in *orientalis*).

Misure dell'holotypus — Lunghezza del corpo: con il rostro mm 13,9. Pronoto + elitre mm 10,2. Pronoto: lunghezza alla linea mediana mm 3,0; larghezza massima mm 3,0. Elitre: lunghezza alla sutura mm 7,2; larghezza massima mm 4,3. Antenne: scapo mm 2,1; funicolo mm 1,9; clava mm 1,0.

Descrizione dell'holotypus — Allungato, nero, lucido, con squamulatura giallastra, condensata in macchie sulle elitre ed in fasce longitudinali sul pronoto. Rostro cilindrico, lievemente allargato all'apice, con leggera carena mediana tra la fronte e l'inserzione delle antenne, con robusta punteggiatura collocata in strie



Figg. 5 - 8 — *Hylobitelus chenckupdorjii* n. sp. paratypus, Chiley-là, W. Bhutan: edeago (diritto e profilo) (5), tegmen (6) e spiculum gastrale (7); idem, allotypus, spermateca (8).

longitudinali tra la fronte e l'inserzione delle antenne (fine e fitta dopo queste ultime). Scrobe incavate, lisce, parzialmente visibili dall'alto, terminanti all'altezza medio-inferiore degli occhi. Antenne lunghe con scapo sottile, appena più robusto all'apice che, all'indietro, raggiunge la parte mediana dell'occhio; funicolo sparsamente setoloso con i primi due articoli molto allungati, conici, di lunghezza subeguale, 3° - 6° appena più lunghi che larghi, 7° nettamente trasverso; clava grande, ellittica, ricoperta di minute setoline, con i primi due articoli allungati, subeguali, molto grandi, 3° - 4° più corti, conici. Capo conico, fronte punteggiata, nettamente più stretta del rostro alla base, con una profonda fossetta mediana. Occhi piani, ellittici. Pronoto lungo quanto largo, fortemente varioloso con fossette e tubercoli arrotondati, breve carena mediana nella parte inferiore, maggiore ampiezza nella parte mediana con robusta strozzatura nella parte mediana (1/3 anteriore). Sono visibili tre strie di squame longitudinali gialle (due ai lati ed una parallela alla carena mediana). Scutello cordiforme, leggermente emergente dalle elitre, finemente punteggiato. Elitre più larghe del pronoto, con omeri nettamente sporgenti, saldate alla sutura, variolosamente punteggiate, con punti grandi e profondi di grandezza variabile, interstrie 3° e 5° (soprattutto) e 7° più rilevate, con tubercoli arrotondati. Singole setoline chiare sono presenti sulle interstrie pari; setole giallicce, condensate a macchia, sono invece presenti su quelle pari; esse danno all'insetto un aspetto marezzato. All'altezza della declività posteriore, le elitre si restringono fortemente a becco. Zampe mediamente robuste con femori rigonfi, sparsamente squamulati, provvisti di un piccolo dente; tibie sottili con frange di setole gialle obliquamente disposte all'apice, tarsi lunghi, 1° e 2° articolo nettamente più lunghi che larghi, 3° fortemente bilobo, onichio allungatissimo. Inferiormente il capo è provvisto di striature trasversali e lobi oculari evidenti. Coxe anteriori molto rilevate, coniche, contigue; coxe mediane appiattite, separate da uno spazio pari a mezza coxa; coxe posteriori poco evidenti. Urosternite 1° appena più largo del 2° con sutura saldata, urosterniti 3° - 4° piuttosto larghi, subeguali, con sutura non saldata. Edeago: Figg. 9, 10.

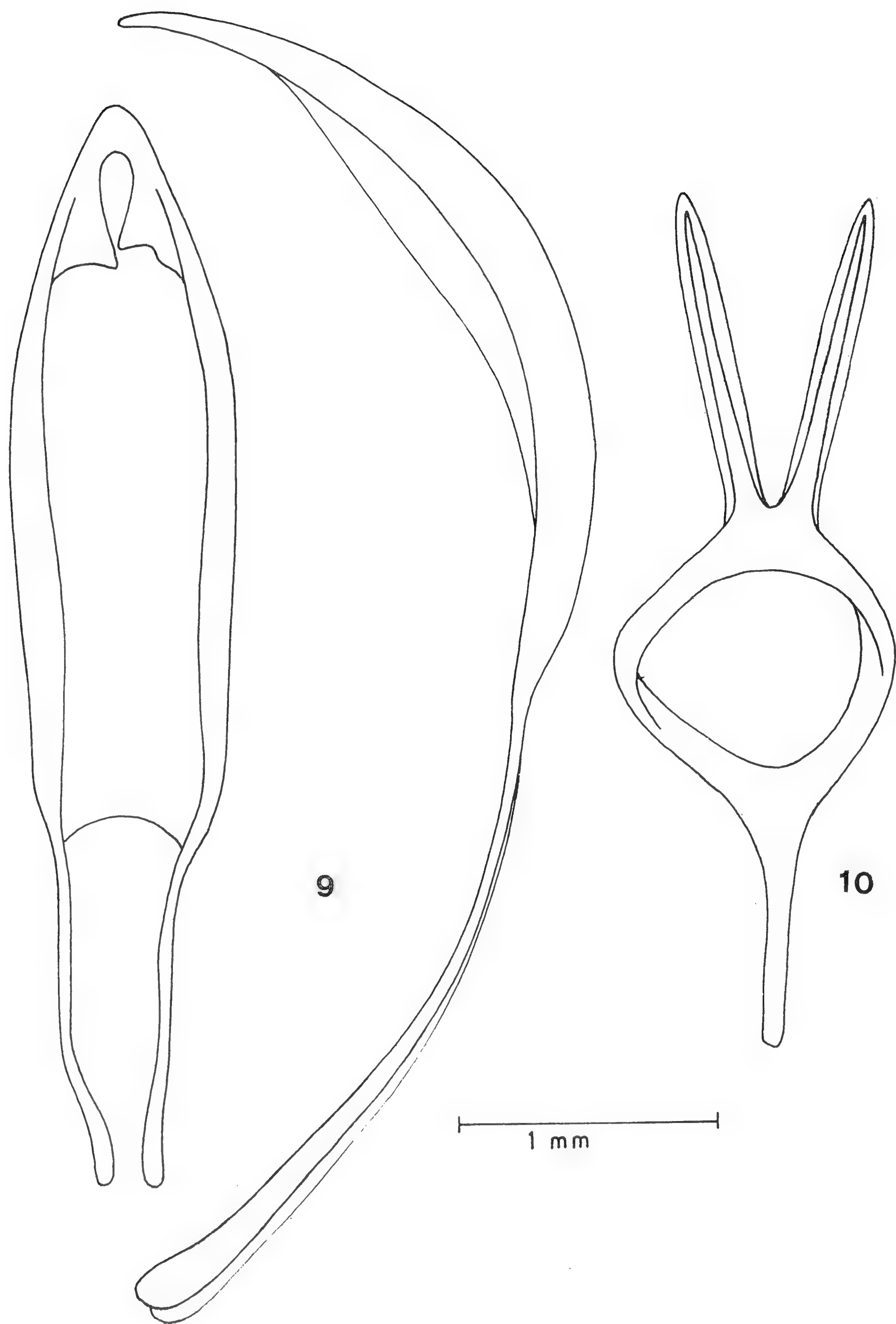
Descrizione dell'allotipo e del paratipo — La ♀ allotipica si distingue dal ♂ solo per le dimensioni leggermente maggiori e per le elitre meno parallele. Gli altri paratipi sono praticamente indistinguibili dal tipo.

Derivatio nominis — La n. sp. è dedicata al dr. Dasho Paljor Dorjii, giudice capo del regno del Bhutan che, insieme al dr. Dasho Chenckup Dorjii, ha grandemente favorito lo sviluppo delle Scienze Naturali in Bhutan.

Distribuzione geografica — La n. sp. è quasi certamente un endemita del Bhutan.

Note ecologiche e biologiche — Cfr. *Hylobitelus chenkupdorjii*.

Osservazioni — La difficile sistematica degli Hylobiinae (= Molytinae sensu KUSHEL, in litt.) della Regione Orientale è stata efficacemente riassunta da ASLAM (1963) partendo da LACORDAIRE (1863), FAUST (1892), REITTER (1912), BLATCHLEY & LENG (1916) per giungere ad HELLER (1929), MARSHALL (1932), DALLA TORRE (1932), KÔNO (1934), SOLARI (1941) e MARSHALL (1948). MORIMOTO (1982) ha ulteriormente perfezionato la base elaborata da ASLAM (l.c.) ridefinendo il genere *Hylobius* Germ. (specie tipica: *H. piceus* De Geer) ed il genere *Hylobitelus* Reitt. (specie tipica: *H. verrucipennis* Boh.). Noi abbiamo adottato in questo lavoro la sistematica di Morimoto soprattutto per quanto riguarda



Figg. 9 - 10 — *Dyscerus paljordorjii* n. sp., holotypus, Chiley-là, W. Bhutan: edeago (diritto e profilo) (9), tegmen (10).

la definizione dei generi più controversi (*Hylobius* Germ., *Hylobitelus* Reitt., *Paramecops* Schön., *Pagiophloeus* Faust e *Dyscerus* Faust). L'individuazione specifica delle specie qui descritte ci è stata facilitata, oltre che dallo studio delle diagnosi originali e dai lavori di ASLAM (1963) e di MORIMOTO (1982), dall'esame delle seguenti specie (determinate da Heller, Marshall, Pascoe, Champion e Voss) della mia collezione o inviatemi in studio dal dr. R.T. Thompson (British Museum): *Aclees cribratus* (Gyllh., 1836) (Cina), *Pagiophloeus andrewesi* Heller (1908) (India), *Dyscerus clathratus* (Pascoe, 1887) (India), *Dyscerus furcatus* Marshall, 1924 (India), *Dyscerus longiclava* Mshl., 1924 (Burma), *Dyscerus malignus* Mshl., 1924 (Assam), *Dyscerus orientalis* (Motsch., 1866) (Giappone, Cina).

Dyscerus holzschuhi n. sp.

Loc. tip.: Katmandu, Nepal.

Materiale esaminato: 3 ♀♀ etichettate « Central Nepal, 1500 m, Katmandu, Valley Godavary, 3.VI.1987, leg. C. Holzschuh ».

Diagnosi — Un *Dyscerus* vicino a *D. paljordorjii* ma facilmente differenziabile per i tegumenti rosso-bruni, per le squame nettamente più sottili, presenti soltanto (raggruppate in piccole macchie) nella seconda metà delle elitre, per il rostro con punteggiatura meno evidente, per il pronoto non strozzato nel 1/3 anteriore con carena mediana appena percettibile, punteggiatura rilevata, per le strie con punteggiatura robusta, regolarmente distribuita (all'indietro le elitre sono meno ristrette) e per la conformazione dell'edeago.

Misure dell'holotipus — Lunghezza del corpo: con il rostro mm 18,0. Pronoto + elitre mm 13,1. Pronoto: lunghezza alla linea mediana mm 4,4; larghezza massima mm 3,88. Elitre: lunghezza alla sutura mm 8,7; larghezza massima mm 5,5. Antenne: scapo mm 1,4; funicolo mm 1,4; clava mm 1,2.

Descrizione dell'holotipus — Allungato, uniformemente di colore rosso-bruno, elitre parallele non ristrette a becco posteriormente, con setole condensate a macchie nella seconda metà delle elitre. Rostro cilindrico, regolarmente ricurvo, striato-punteggiato, debolmente carenato nel mezzo. Scrobe lucide, parzialmente visibili dall'alto, che si fermano all'altezza dell'occhio al livello medio-inferiore. Antenne più robuste e brevi di quelle di *D. paljordorjii*, funicolo con i primi due articoli allungati, conici, il 2° di lunghezza appena inferiore a quella del 1°, articoli 3° - 7° fortemente trasversi; clava molto grande, coperta di minutissima peluria, con i primi due articoli molto grandi, subeguali. Capo conico con forte fovea mediana; fronte nettamente più stretta del rostro alla base. Occhi ellittici, piatti. Pronoto più lungo che largo, cilindrico, convesso, con brevissima carena mediana, variolosamente punteggiato ma senza turbercoli, massima ampiezza a metà. Scutello subcordiforme, collocato al livello delle elitre. Elitre allungate, subparallele, omeri sporgenti, sutura saldata, nettamente più larga del pronoto, strie regolarmente conformate con robustissima punteggiatura ordinatamente intervallata; interstrie più strette delle strie, convesse. Zampe robuste con femori dentati, più fortemente rigonfi che in *D. paljordorjii*. Procoxe coniche, continue alla base, largamente separate invece distalmente.

Descrizione dell'allotipo e del paratipo — La ♀ differisce dal tipo unicamente per le dimensioni (leggermente inferiori); lo stesso dicasi per il paratipo.

Derivatio nomini: — La n. sp. è dedicata al dr. C. Holzschuh.

Note ecologiche — Non possediamo precise informazioni sulla biologia di questa specie; è probabile tuttavia sia anch'essa infeudata alle stesse piante elencate per *Hylobitelus chenckupdorjii*.

Distribuzione geografica — Probabile endemita nepalese.

Dyscerus furcatus Marshall, 1924 (Figg. 11 - 13)

Di questa specie, molto caratteristica a motivo delle elitre terminanti in due mucroni appuntiti ho esaminato 1 ♂ etichettato « C. Nepal, 1500 m, Katmandu, valley Godavary, 3.VI.1987, leg. C. Holzschuh ». Esso corrisponde perfettamente ad un paratipo (West Batchar, Kumaon, May 1920, H.G.C.) ed a 3 altri esemplari, non paratipici, etichettati « Dhelu, Mandi, Punjab, 4500 ft » (det. Marshall) mandatimi in visione dal dr. R.T. Thompson. Essa è pertanto nuova per la fauna nepalese.

Per avere un'idea della morfologia di questa specie e dell'edeago, vedi Figg. 11 - 13.

Xenomimetes schmutzenhoferi n. sp. (Figg. 14 - 15, 17 - 19)

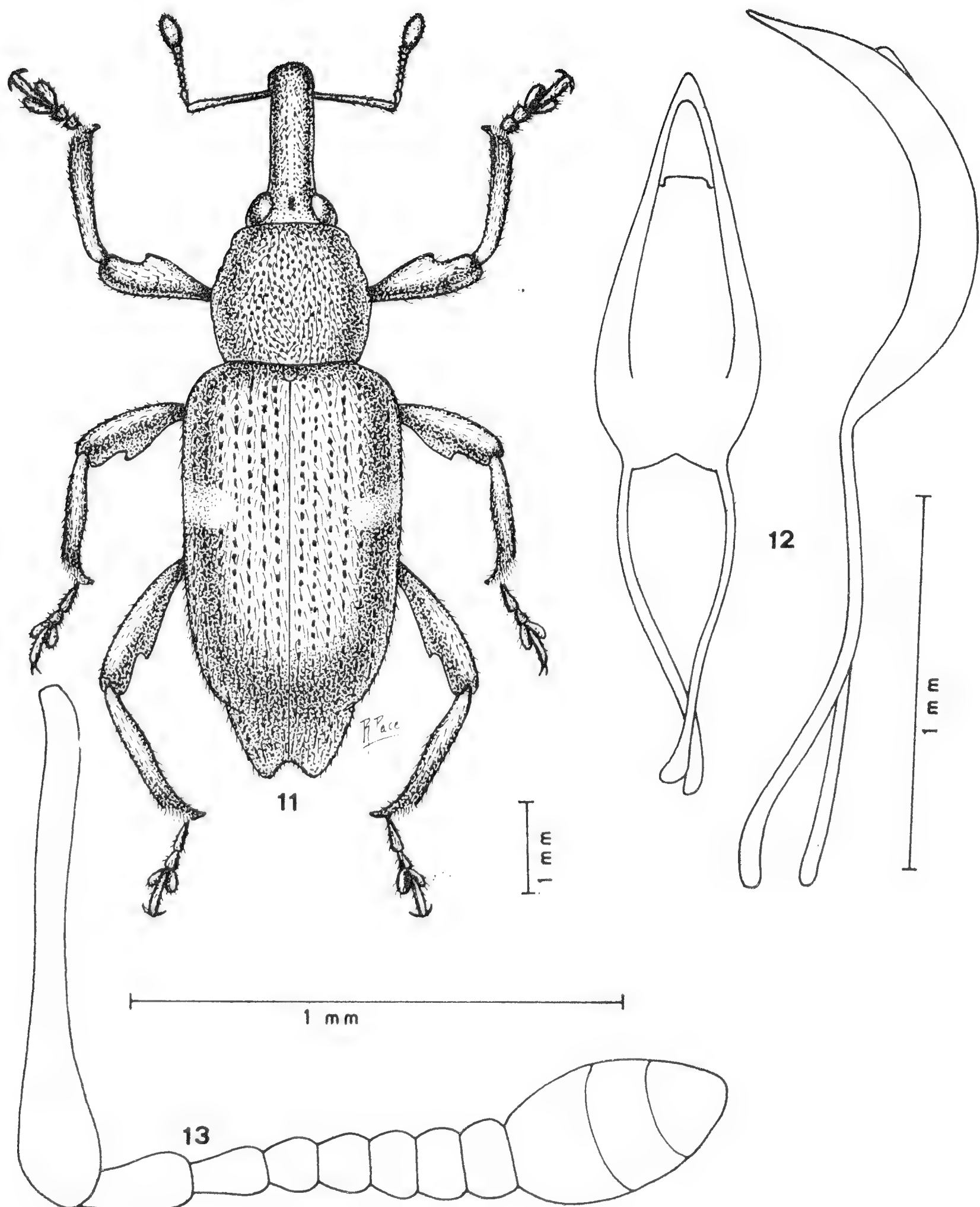
Loc. tip.: Chiley-là, W. Bhutan.

Materiale esaminato: 29 esemplari etichettati « Bhutan, Chiley-là, 21.IX.1985, leg. H. Schmutzenhofer »; idem, 7 esemplari, 22.IX.1985; idem, 2 esemplari etichettati « Bhutan, Ha, 29.X.1985, leg. Schmutzenhofer »; idem, 1 esemplare etichettato « Bhutan, Yesufen, 24. IX.1985, leg. Schmutzenhofer »; idem, 5 esemplari etichettati « Bhutan, Chamgang, 1-14,29.IX.1986, leg. Schmutzenhofer »; idem, 25 esemplari etichettati « West Bhutan, district Paro, 3000 m, Chiley-là, 18.VIII.1987, leg. Schmutzenhofer ». Holotypus ♂ è etichettato « Chiley-là, 21.IX.1985, leg. Schmutzenhofer ».

Diagnosi — Uno *Xenomimetes* Woll. agevolmente differenziabile da *X. sikimensis* (Mshl.) (la specie sistematicamente più vicina) e da *X. himalayensis* (Stebb.) per le elitre più larghe del pronoto, gli occhi più sporgenti, le elitre più espanse nella parte terminale con 9^a interstria più rilevata e per la conformazione dell'edeago (Fig. 17).

Misure dell'holotypus — Lunghezza del corpo: con il rostro mm 4,63. Pronoto + elitre mm 3,81. Pronoto: lunghezza alla linea mediana mm 1,12; larghezza massima mm 1,06. Elitre: lunghezza alla sutura mm 2,69; larghezza massima mm 1,22. Antenne: scapo mm 0,28; funicolo mm 0,28; clava mm 0,15.

Descrizione dell'holotypus — Nero, brillante, allungato; antenne giallo pallide, tibie e tarsi rossicci. Capo largo, punteggiato; rostro più lungo che largo, a lati subparalleli, scrobe strette, oblique. Antenne corte e robuste, 1° articolo del funicolo conico più grande e robusto dei restanti (che sono fortemente trasversi). Occhi nettamente sporgenti, ovali. Protorace più lungo che largo, più largo alla base che all'estremità opposta, leggermente conico, robustamente punteggiato-striato. Scutello evidentemente infossato. Elitre nettamente più larghe del pronoto, variolosamente punteggiate, strie più larghe delle interstrie, appiattite ed allargate posteriormente con la 9^a stria rilevata a formare una carena appiattita evidente.



Figg. 11 - 13 — *Dyscerus furcatus* Marshall, Katmandu, Nepal: habitus (11), edeago (12) ed antenna (13).

Zampe brevi e robuste, femori allargati nel mezzo; tibie appiattite, dentellate con ciuffi di setole sul margine interno; tarsi sottili, 3° articolo stretto, 4° (onichio) allungatissimo con unghie sottili.

Ritengo opportuno elencare in contrapposto le più significative differenze che permettono di distinguere *X. schmutzenhoferi* n. sp. da *X. himalayensis* (Stebb.), soprattutto per il fatto che ambedue sono considerate dannose alle conifere (STEBBING, 1914).

Xenomimetes himalayensis (Stebbing)

- Rostro lungo quanto largo, a lati curvilinei, con punti spesso rugosamente allineati; mandibole monocuspide.
- Scapo più breve, 1° articolo del funicolo cilindrico, 7° largo quanto la clava.
- Occhi appena sporgenti, separati da una distanza di poco superiore a quella del rostro alla base, vertice liscio, sparsamente punteggiato.
- Pronoto cilindrico, pressoché largo alla base quanto all'estremità opposta, non strozzato verso il capo, con una sottile linea liscia sul disco.
- Eltre appena più larghe del pronoto con strie più larghe delle interstrie, punti quadrati nettamente delimitati, interstrie leggermente rilevate, 9ª interstria più leggermente rilevata, margine apicale meno espanso.
- Edeago ad apice allungato, leggermente ristretto all'estremità.
- Lunghezza: mm 3,9 - 4,8.
- Corologia: N.W. Himalaya.
- Piante ospiti: *Pinus excelsa*, *Picea morinda*, *Cedrus deodara*.

Xenomimetes schmutzenhoferi n. sp.

- Rostro di poco ma nettamente più lungo che largo, a lati subparalleli, punti non rugosamente allineati; mandibole bicuspidate.
- Scapo un po' più lungo, 1° articolo del funicolo conico, 7° più largo e robusto.
- Occhi fortemente sporgenti, separati da una distanza pari a 1,5 volte la larghezza del rostro alla base; vertice con punteggiatura simile a quella della fronte.
- Pronoto nettamente più largo alla base, leggermente conico, strozzato dietro il capo con linea mediana discale impunteggiata più larga.
- Eltre nettamente più larghe del pronoto con strie più larghe delle interstrie ma punti meno nettamente definiti, interstrie piane, 9ª più brevemente rilevata ma margine apicale più espanso.
- Edeago ad apice arrotondato.
- Lunghezza: mm 4,4 - 4,8.
- Corologia: Bhutan occidentale.
- Piante ospiti: *Picea spinulosa*.

Altra caratteristica che separa le due specie è data dalla prima stria elitrale che si ferma all'altezza della parte inferiore dello scutello in *X. schmutzenhoferi* mentre si prolunga sino alla metà dello stesso in *X. himalayensis*. *X. schmutzenhoferi* si differenzia infine agevolmente da *X. sikkimensis* Mshl. (con il quale condivide la fronte più larga del rostro alla base, il pronoto leggermente conico ed il rostro a lati subparalleli), per il pronoto con punteggiatura variolosa, l'espansione lamellare terminale delle elitre più ampia del pronoto e la superficie del corpo più liscia e brillante nonché la biologia. *X. sikkimensis* è stato raccolto infatti su *Cannabis sativa*. *X. opicicauda* Mshl. (Burma), infine, differisce, in base alla descrizione, per la punteggiatura del pronoto più allungata, per le elitre opache e per le espansioni terminali delle elitre più evidenti.

Variabilità della specie — La variabilità di questa specie sembra limitata alle dimensioni (mm 4,4 - 4,8), all'altezza della linea impunteggiata mediana del pronoto, alla seconda stria elitrare che svanisce in maniera più o meno evidente alla base delle elitre e per il vertice più o meno punteggiato.

Note biologiche — La specie è infeudata a *Picea*.

Ritengo utile offrire una chiave di determinazione delle specie himalaiane di *Xenomimetes* Woll.:

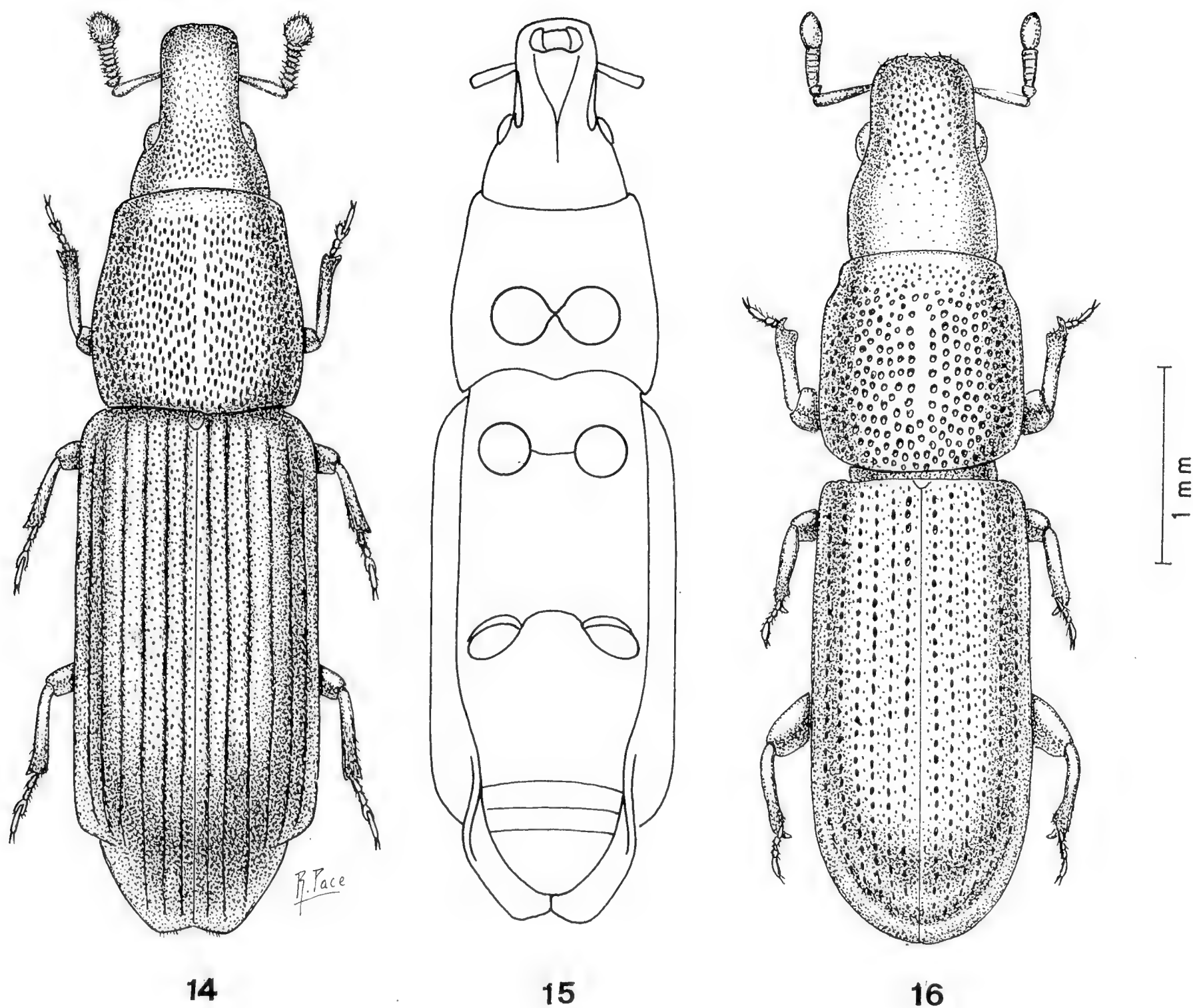
- 1 - Rostro lungo quanto largo, a lati curvilinei, vertice tra gli occhi nettamente più larga del rostro alla base. Edeago ad apice lungo ed assottigliato. Lunghezza mm 3,9-4,8
 *himalayensis* (Stebbing)
- Rostro più lungo che largo, a lati paralleli o subparalleli, vertice tra gli occhi appena più larga del rostro alla base 2
- 2 - Occhi fortemente sporgenti, punteggiatura del pronoto e delle elitre variolosa, pronoto anteriormente strozzato, onichio assai lungo. Lunghezza mm 4,4-4,9
 *schmutzenhoferi* n. sp.
- Occhi solo debolmente sporgenti, punteggiatura del pronoto e delle elitre più superficiale, pronoto non strozzato dietro il capo, onichio più breve. Lunghezza mm 3,4-5,25
 *sikkimensis* Mshl.

Osservazioni sul genere Xenomimetes Wollaston, 1873

Il genere *Xenomimetes* Woll. fu descritto da Wollaston per includere una specie giapponese: *X. destructor* Woll. Successivamente STEBBING (1914) descrive *Rhyncholus* (sic!) *himalayensis* e MARSHALL (1931) *Eremotes sikkimensis*. Questi dati vengono ripresi da CSIKI (1931). Nessun ulteriore cenno a questo genere viene fatto da MARSHALL (1938, 1958), VOSS (1951, 1955, 1956, 1957, 1963, 1964), ZIMMERMANN (1942, 1957), FOLWACZNY (1973). Solo MARSHALL (1937, 1948) e KONISHI (1955) vi accennano limitatamente alla descrizione di due nuove entità (*X. opacicauda* Marshall e *X. alni* Konishi).

La chiave di MORIMOTO (1973) dà un nuovo inquadramento dei Cossoninae orientali anche a livello di tribù. Grazie alla conformazione del mesosterno (collocato sullo stesso piano del metasterno), *Xenomimetes* viene collocato dallo studioso giapponese tra i Cossonini in posizione singolarmente lontana dai Rhyncholini (ov'era precedentemente sistemato) mentre *Pselactus* Broun, caratterizzato da un notevole sviluppo del rostro, viene collocato tra i Rhyncholini. Quali che siano i limiti della sistematica di MORIMOTO (che non intendo qui discutere), essa ci permette tuttavia di attribuire a *Xenomimetes* senz'ombra di dubbio tutte e tre le specie indo-himalaiane sopra indicate. L'areale del genere che, pertanto, ne risulta, appare singolarmente diviso in due parti molto lontane tra di loro; ciò fa presumere una sua ben più vasta diffusione nell'Asia paleartica ed orientale.

Il genere *Xenomimetes*, per una singolare convergenza (?) morfologica (elitre lamellarmente espanse ai lati nella parte terminale), ricorda il genere paleartico occidentale *Axenomimetes* Voss (*Eremotes* auct. partim). Ne differisce, oltre che per alcune importanti caratteristiche morfologiche e biologiche, anche per la differente corologia (benché non siano ancora esattamente noti i limiti orientali di *Axenomimetes* né il valore sistematico di alcune sue entità caucasiche ed irano-centroasiatiche).



Figg. 14-16 — *Xenomimetes schmutzenhoferi* n. sp. holotypus, Chiley-là, W. Bhutan: habitus (14) e schematico dal ventre (15). *Rhyncolus bhutanensis* n. sp., holotypus, Chiley-là, W. Bhutan: habitus (16).

Rhyncolus bhutanensis n. sp. (Fig. 16)

Loc. tip.: Chiley-là, Bhutan.

Materiale esaminato: 1 ♀ etichettata « Bhutan, Chiley-là, 1.V.1986, leg. H. Schmutzenhofer ».

Diagnosi — Un *Rhyncolus* del gruppo *sculpturatus* Walt. differenziabile per la forte punteggiatura del pronoto accompagnata da una carena mediana evidente, impunteggiata, liscia, per lo scapo antennale più lungo con funicolo relativamente snello e per le interstrie careniformi.

Misure dell'holotypus — Lunghezza complessiva del corpo: con il rostro mm 4,41. Pronoto + elitre mm 3,77. Pronoto: lunghezza alla linea mediana mm 1,17;

larghezza massima mm 1,08. Elitre: lunghezza alla sutura mm 2,60; larghezza massima mm 1,2. Antenne: scapo mm 0,24; funicolo mm 0,18; clava mm 0,12.

Descrizione dell'holotypus — Sagoma e dimensioni di *R. elongatus* Gyll., corpo cilindrico, tegumenti neri, debolmente brillanti. Rostro dorsalmente appiattito, un po' più lungo che largo, con punteggiatura rotonda, spaziata, disposta vagamente a formare linee longitudinali; scrobe nette, brevi, dirette verso il basso. Antenne piuttosto gracili (come quelle di *sculpturatus*) con scapo breve che raggiunge appena il margine anteriore degli occhi, 1° articolo del funicolo più lungo e più grande dei restanti (che sono tutti trasversi e compatti) clava di modeste dimensioni; occhi rotondi, discretamente sporgenti, capo leggermente ristretto dietro gli occhi, tempie lisce (tranne che sul disco ove sono superficialmente punteggiate). Pronoto cilindrico, più lungo che largo, fortemente punteggiato, con punti disposti secondo linee longitudinali, linea discale mediana rilevata, liscia. Scutello liscio, rotondo, brillante. Elitre cilindriche, a lati paralleli, con strie molto larghe con forte punteggiatura, interstrie sottili, careniformi ai lati ed alla base delle elitre, piane sul disco, finemente punteggiate, 6^a interstria posteriormente careniforme ed allargata. Zampe robuste con un forte uncino, profemori largamente appiattiti.

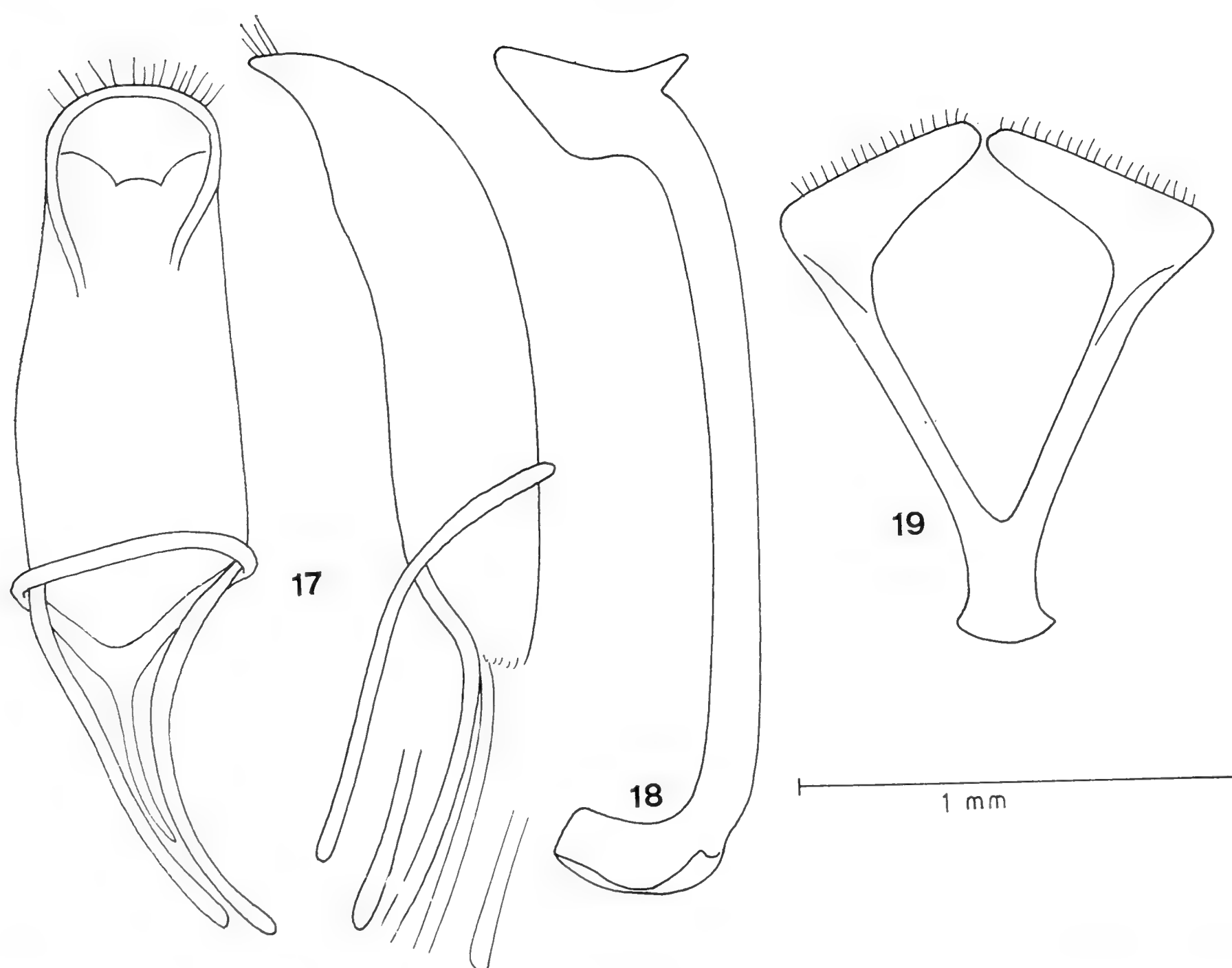
Note comparative — Per le antenne relativamente gracili, la n. sp. si avvicina soprattutto a *R. sculpturatus*; se ne differenzia agevolmente per la clava più grande, il funicolo un po' più lungo, la punteggiatura del rostro più forte e robusta, variolosa (spaziata in *sculpturatus* con intervalli lisci) con carena mediana netta, per le strie profonde con punteggiatura trasversale ed interstrie careniformi (in *sculpturatus* le interstrie sono rilevate ma non careniformi, larghe circa quanto le strie, finemente punteggiate).

Assai più agevole è la distinzione da *R. elongatus* Gyll. e *R. crassicornis* Brullé perché questi ultimi hanno antenne robuste, il pronoto molto più largo, con punteggiatura profonda, variolosa ma senza carena mediana, le interstrie elitali non careniformi e le strie larghe quanto le interstrie con punteggiatura nettamente delimitata.

Derivatio nominis — Dalla patria tipica, il Bhutan.

Note ecologiche e biologiche — L'esemplare in studio è stato raccolto su *Larix*, verisimilmente nel legno morto da diverso tempo. Tutte le specie di *Rhyncolus* possono dividersi, dal punto di vista dell'alimentazione (ma forse anche sistematico: il problema andrebbe approfondito) in due gruppi: specie legate alle latifoglie: *R. heydeni* Fst, *R. nefarius* Fst, *R. punctulatus* Boh., *R. chloropus* F.; e specie legate alle conifere: *R. crassicornis* Brullé, *R. elongatus* Gyll., *R. sculpturatus* Walt., *R. strangulatus* Perris, *R. syriacus* Desbr. (?). Solo *R. chloropus* L. è stato raccolto anche su conifere (HOFFMANN, 1954). *Axenomimetes reflexus* Boh., considerato sottogenere di *Rhyncolus* da VOSS (1954/55) e FOLWACZNY (1973) è, a mia opinione, genere a sé. Si tratta comunque di specie xilofaghe secondarie, tipiche del legno umido ed invase da ife fungine.

Distribuzione geografica — La distribuzione dei *Rhyncolus* paleartici illustrata da FOLWACZNY (1973), viene considerata ampliata dalla scoperta di questa nuova specie. Le entità legate alle conifere che, antecedentemente, ad est, giungevano appena alla regione caucasica, risultano ora presenti anche nella catena himalaiana.



Figg. 17-19 — *Xenomimetes schmutzenhoferi* n. sp., holotypus, Chiley-là, W. Bhutan: edeago (17) e spiculum gastrale (18); idem, allotypus, spiculum ventrale (19).

Rhyncolus (?) incertus n. sp.

Loc. tip.: Chiley-là, Bhutan.

Materiale esaminato: 1 ♀ etichettata « Chiley-là, Bhutan, 9.VI.1986, leg. Schmutzenhofer »; idem, 1 ♀ etichettata « Chiley-là, Bhutan, 26.VI.1986, leg. Schmutzenhofer ».

Diagnosi — *Rhyncolus* differenziato da tutte le specie conosciute per il rostro corto, cilindrico, lungo appena quanto largo, non appiattito con una lieve strozzatura tra gli occhi e l'apice dello stesso.

Misure dell'holotypus — Lunghezza del corpo: con il rostro mm 4,7. Pronoto: lunghezza alla linea mediana mm 1,17. Larghezza massima mm 1,0. Elitre: lunghezza alla sutura mm 2,53; larghezza massima mm 1,18. Antenne: non misurabili con sufficiente precisione.

Descrizione dell'holotypus — Stretto, allungato, debolmente capo e protorace neri, elitre rossicce. Rostro lungo quanto largo, con una strozzatura tra l'apice e gli occhi, finemente punteggiato e con un breve solco longitudinale mediano, largo quanto la fronte tra gli occhi; dietro questi è debolmente strozzato e con finissima punteggiatura alle tempie. Pronoto con punteggiatura pure fine e spar-

sa, più lungo che largo, a lati paralleli, appena debolmente strozzato dietro il capo. Scrobe profonde, dirette sotto gli occhi, largamente separate inferiormente. Antenne brevi e robuste con scapo pure breve (è meno lungo del funicolo) che, all'indietro, raggiunge appena il margine posteriore dell'occhio; funicolo a 1° articolo più lungo che largo, più lungo e robusto dei restanti, questi fortemente trasversi e compatti, 7° più largo del 6°, clava grande, ellittica. Elitre nettamente più larghe del pronoto, cilindriche, perfettamente parallele ai lati, strie a punti superficiali, le prime due più marcate, le successive più svanite andando sia verso l'esterno sia verso l'estremità posteriore. Interstrie leggermente convesse (soprattutto le prime due e particolarmente alla base), larghe circa due volte l'ampiezza delle strie. Raggiungono la base le interstrie 1^a - 5^a e 9^a - 10^a; si fermano all'altezza del callo omerale le strie 6^a - 8^a. Posteriormente, la 10^a si ferma all'altezza delle coxe mediane, la 9^a si salda con la 2^a, l'8^a con la 3^a; la 7^a e la 5^a invece si fermano all'altezza della declività posteriore. Le zampe sono piuttosto gracili, le protibie sono sinuose, il 5° articolo tarsale lungo, stretto alla base ed allargato all'estremità. Coxe anteriori coniche, ben rilevate, appena separate alla base; coxe mediane più appiattite, più ampiamente separate; coxe posteriori poco rilevate, ampiamente separate. Sterniti toracici ed addominali finemente punteggiati, brillanti, 1° - 2° urosterniti saldati con sutura appena percettibile (negli altri *Rhyncolus* la saldatura è ancora ben visibile).

Descrizione del paratipo — Praticamente non distinguibile dal tipo.

Derivatio nominis — Con il nome di *incertus* si è voluta sottolineare la difficoltà nell'attribuzione generica di questa specie.

Distribuzione geografica — Specie probabilmente endemica del Bhutan.

Note biologiche — Raccolto nel legno morto di *Picea*.

Osservazione — L'attribuzione di questa specie a *Rhyncolus* è fatta in base a MORIMOTO (1973) ma non è del tutto soddisfacente in quanto in tutte le specie paleartiche di questo genere infeudate alle conifere (cfr. FOLWACZNY, 1973) il rostro è largo e piatto e più lungo che largo con lati paralleli. In *R. (?) incertus* invece il rostro è cilindrico, strozzato medialmente e solo lungo quanto largo. Lo studio invece delle specie legate alle latifoglie andrebbe ulteriormente approfondito. Ad un primo superficiale esame, la n. sp. si avvicina anche al genere *Conarthrus* Woll.; se ne separa facilmente per il 5° articolo tarsale normale (non allargato cioè alla base ed affusolato all'estremità), per il prosterno non incavato, le protibie normali ed il rostro solo lungo quanto largo (anziché più lungo che largo). E' pertanto possibile che la n. sp. appartenga ad un genere (o ad un sottogenere) inedito.

Stenoscelis cfr. **cephalotes** (Faust, 1898)

L'unico esemplare esaminato (Ghedu, Bhutan, 17.V.1986, leg. Schmutzenhofer), si distingue da *cephalotes* per la fronte più finemente punteggiata, per la punteggiatura del pronoto più profonda e di diametro maggiore, per le interstrie elitrali più larghe e meno careniformi e per le dimensioni un po' minori. Purtroppo le cattive condizioni di conservazione dell'esemplare (che è privo di addome e di un'elitra) mi impediscono una più approfondita analisi. *Stenoscelis cephalotes* Faust presenta una vasta distribuzione nella penisola indiana (CSIKI, 1936).

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RIASSUNTO

L'Autore studia una piccola collezione di Curculionidi (Coleotteri) appartenenti alle sottofamiglie Molytinae (= Hylobiinae) e Cossoninae, raccolti per lo più nel Bhutan occidentale, dall'ing. H. Schmutzenhofer, ritenuti dannosi alle conifere (soprattutto ad *Abies spinulosa*). Delle 9 entità raccolte, 7 vengono descritte come nuove per la Scienza, cioè le seguenti: *Aclees pseudocribratus* (Madyan, Pakistan), *Hylobitelus chenckupdorjii* (Chiley-là, Bhutan), *Dyscerus paljordorjii* (Chiley-là, W. Bhutan), *Dyscerus holzschubi* (Katmandu, Nepal), *Xenomimetes schmutzenhoferi* (Chiley-là, W. Bhutan), *Rhyncolus bhutanensis* (Chiley-là, W. Bhutan), *Rhyncolus* (?) *incertus* (Chiley-là, W. Bhutan). Viene altresì illustrato per la prima volta l'habitus e l'apparato genitale maschile di *Dyscerus furcatus* Mshl. Sono infine aggiunte alcune annotazioni, sistematiche, nomenclatoriali e zoogeografiche relative ad *Hylobitelus* Reitt. (= *Hylobius* auct., partim), *Xenomimetes* Woll. e *Rhyncolus* Stephens.

ABSTRACT

New or little known Curculionidae from Himalaya (Coleoptera).

The Author describes the results of a study of a collection of Curculionidae (Coleoptera) collected for the most part in Bhutan by H. Schmutzenhofer and considered harmful to conifers (especially *Picea spinulosa*). The collection comprises nine species belonging to the Molytinae (= Hylobiinae) and Cossoninae sub-families; seven of these are new. They are as follows:

— *Aclees pseudocribratus* (Madyan, Pakistan). This is a species related to *A. cribratus* Gyll. (Orient). It differs from this latter in its more strongly rugose-foveate pronotum, its more strongly punctate-striate rostrum, in the carinaform elytral interstriae (which are flat in *A. cribratus*), and in the sparsely punctate metasternum and urosternites. *A. conicollis* Desbr. (Sikkim) differs from the new species in its truncate-conic pronotum with very large square puncturation, the presence of ocular lobes, and in the clearly separate 2nd and 3rd segments of the clava (they merge in *pseudocribratus*). *A. pseudocribratus* differs from *A. pacca* F. in its prothorax being as long as it is wide (whereas in *A. pacca* it is longer than it is wide), and its wide elytra not trisinate at the base. The new species differs from *A. taiwanensis* Kono in its narrower, more foveate pronotum and the smaller punctures on the striae.

— *Hylobitelus chenckupdorjii* (Chiley-là, W. Bhutan). This species differs from *H. angustus* Fairm. (the only *Hylobitelus* known to date in the Himalayas) in its bright red (instead of reddish-brown) teguments, the elytral squamation being limited to two fasciae (instead of being spread all over the surface) with more foveate puncturation, its shorter funiculus, less strongly dentate profemur and, lastly, in its more apically narrowed aedeagus.

— *Dyscerus paljordorjii* (Chiley-là, W. Bhutan). This species is closely related to *D. orientalis* (Motsch.) and is easily distinguished from it by its different elytral vestiture, by the irregular distribution of the tubercles of the pronotum, by the more pronounced 3rd-5th interstriae (in *D. orientalis* only the 2nd interstria protrudes more than the others) and lastly in the more elongate, apically pointed aedeagus.

— *Dyscerus holzschubi* (Katmandu, Nepal). A species related to *D. paljordorjii*, but easily distinguished from this latter by its reddish-brown teguments with thinner scales that merge in a patch in the posterior portion of the elytra and by the shape of its aedeagus.

— *Xenomimetes schmutzenhoferi* (Chiley-là, W. Bhutan). A species easily distinguishable from *X. sikkimensis* and from *X. himalayensis* by its elytra being wider than the pronotum, its more strongly protruding eyes, the shape of its aedeagus, etc.

The three Himalayan species can therefore be dichotomized as follows:

- 1 - Rostrum as long as wide, with sinuate sides; vertex between the eyes clearly wider than rostrum at base; aedeagus with long and thin apex. Length 3.9 - 4.8 mm. NW Hymalayas *himalayensis* (Stebbing)
- Rostrum longer than wide, with parallel or subparallel sides; vertex between the eyes slightly wider than rostrum at base 2
- 2 - Eyes strongly protruding; puncturation of pronotum and elytra foveate; pronotum abruptly narrowed anteriorly; onychium quite long. Length 4.4 - 4.8 mm. Bhutan *schmutzenhoferi* n. sp.
- Eyes feebly protruding; punctuation of pronotum and elytra foveate; pronotum abruptly narrowed; onychium shorter. Length 3.4 - 5.25 mm. Sikkim *sikkimensis* Marshall

— *Rhyncolus bhutanensis* (Chiley-là, W. Bhutan). This *Rhyncolus* is closely related to *R. sculpturatus* Walth., but differs from it in the puncturation of the pronotum, the presence of a punctate median line on the pronotum, the longer scape with a relatively thin funiculus and the carinaform interstriae.

— *Rhyncolus* (?) *incertus* (Chiley-là, W. Bhutan). This species can be distinguished from the others in the genus *Rhyncolus* by its short, cylindrical rostrum that is barely as long as it is wide with a slight narrowing between the eyes and the margin of the rostrum itself. However the peculiar shape of the rostrum makes the affinity of this *incertus* species with the genus *Rhyncolus* only probable.

The other Curculionidae species mentioned in this paper are:

— *Dysommatus furcatus* Marshall (Katmandu, Godavary Valley, Nepal). This species was previously reported in Punjab. A drawing of the habitus and the male genital apparatus are given.

— *Stenoscelis* cfr. *cephalotes* (Faust) (Ghedu, Bhutan). This species cannot be determined with absolute certainty; it is related to *cephalotes*, a species widespread in the Indian sub-continent.

From a zoogeographical point of view, the Curculionidae from Bhutan seem (at least on the basis of the present material) to consist equally of Oriental species (*Dyscerus paljordorjii*, *Xenomimetes schmutzenhoferi*) and other Palearctic species (with Palearctic affinities) (*Hyllobi-telus chenckupdorjii*, *Rhyncolus bhutanensis*). However, taken as a whole, the material examined, connected to conifers, tips the scales in favour of the Oriental fauna (*Aclees pseudocribra-tus*, *Dyscerus holzschuhi*, *D. furcatus*, *Stenoscelis* cfr. *cephalotes*).

The contemporary presence in Bhutan of the genera *Rhyncolus* and *Xenomimetes* is of particular interest. With the discovery of *R. bhutanicus*, the area of distribution of the former genus — W. Palearctic and Turanic — is greatly enlarged. The latter genus previously known only in Japan (*X. destructor* Woll. and *X. alni*) and Burma (*X. opacicauda* Mshl.), now includes the new species here described (*X. schmutzenhoferi*) as well as two others previously diagnosed but attributed to the genera *Rhyncolus* and *Eremotes*. This seems to demonstrate that *Xeno-mimetes* is widespread in the Orient above all in China and Indochina.

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STUDI SULLE TENTHREDININAE

(Hymenoptera Tenthredinidae)

La conoscenza della fauna europea e, più in generale, paleartico - occidentale delle Tenthredininae si è arricchita, negli ultimi anni, grazie al contributo di svariati autori. Questi non di rado hanno dimostrato la validità di taxa precedentemente ritenuti semplici varietà cromatiche o frettolosamente accantonati come sinonimi di specie già descritte. Come già BENSON in alcuni classici lavori (1940, 1943, 1947, 1959 a), anche gli autori più recenti hanno rivelato, in diversi casi, l'esistenza di complessi di specie strettamente imparentate laddove si riteneva aver a che fare con una o poche entità più o meno variabili. E' il caso, per esempio, delle *Tenthredo* dei gruppi *atra* (CHEVIN, 1974; LACOURT, 1980) e *bi-fasciata* (ZOMBORI, 1977; TAEGER, 1985), del sottogruppo *omissa - marginella* del gruppo *arcuata - schaefferi* (CHEVIN, 1983) e delle *Macrophya* del gruppo *albicincta* (CHEVIN, 1975). E' evidente, dunque, quanto sia necessario un lavoro di revisione critica che ridisegni la sistematica dei generi in questione, lavoro peraltro già iniziato limitatamente ad alcuni gruppi di *Tenthredo* (TAEGER, l.c.), ma che presenta enormi difficoltà anche solo in relazione al numero delle entità coinvolte. Un problema non secondario è inoltre quello delle molte lacune nella conoscenza delle faune dei singoli comparti della regione paleartica occidentale, e dell'interpretazione da dare alla variazione geografica che si riscontra in molte entità.

La presente nota, oltre a fornire nuovi dati sulla fauna italiana delle Tenthredininae, affronta criticamente alcuni problemi relativi ad entità poco note o controverse, come contributo al lavoro di revisione prima auspicato. In particolare vi si considerano, senza una pretesa sistematicità, i generi *Tenthredo* L. e *Macrophya* Dahlbom, cioè i maggiori tra quelli del gruppo considerato; del genere *Rhogogaster* Konow, limitatamente alla sua geonemia in Italia, ci si era occupati in PESARINI & PESARINI, 1988, mentre il genere *Aglaostigma* Kirby sarà oggetto di una futura nota. Tra i rimanenti, un'attenzione particolare meriterebbe il genere *Tenthredopsis* Costa per i problemi che ancora sussistono circa lo status di molte sue specie, ma le difficoltà connesse ne sconsigliano un approccio che non sia quello di una vera e propria revisione.

Mi è gradito ringraziare, per la preziosa collaborazione che in vario modo mi hanno prestato, gli amici e colleghi Guido Campadelli (Istituto di Entomologia « Guido Grandi » di Bologna), Carlo Leonardi (Museo di Storia Naturale di Milano), Guido Pagliano (collaboratore dell'Osservatorio per le malattie delle piante di Torino), Roberto Pantaleoni (collaboratore dell'Istituto di Entomologia « Guido Grandi » di Bologna), Roberto Poggi (Museo di Storia Naturale « Giacomo Doria » di Genova), Enrico Ratti (Direttore del Museo di Storia Naturale di Venezia) e Augusto Vigna Taglianti (Dipartimento di Biologia, Università « La Sapienza » di Roma), nonché il Dr. Max Fischer del Naturhistorisches Museum di Vienna.

Tenthredo obsoleta Klug

Il primo e sinora unico reperto italiano di *T. obsoleta* Klug era quello di MASUTTI & COVASSI (1978) relativo ad una ♀ catturata a 1900 m s.l.m. nelle Alpi Carniche. Ad un secondo esemplare proveniente dalle Alpi Cozie (Colle delle Finestre, 1450 m, 17.VI.1979) conservato in coll. Pagliano, si aggiunge ora una ♀, da me catturata sul massiccio del Gran Sasso (Prati di Tivo, 1500 m circa, 9.VII.1987), che estende notevolmente a Sud l'areale noto della specie. MASUTTI & COVASSI (l.c.) considerano *T. obsoleta* appartenente « a un contingente settentrionale e subalpino della fauna eurosibirica » (p. 140), per cui il reperto appenninico andrebbe considerato quale esempio di un interessante isolato geografico relitto; va detto però che la geonemia di questa specie è certamente ben lungi dall'essere conosciuta a sufficienza, in quanto *T. obsoleta* è stata considerata sino a tempi relativamente recenti una semplice varietà di *T. mesomelas* L. e forse, in quanto tale, segnalata come *T. mesomelas* senza ulteriori specificazioni in diverse occasioni.

Tenthredo ignobilis Klug

Un caso analogo al precedente è quello di *T. ignobilis*, per lungo tempo considerata una varietà cromatica di *T. atra* L. e solo recentemente (1974) riabilitata da CHEVIN al rango di specie. Come sempre, in questi casi, non è tanto una minuziosa disamina dei dati di letteratura che può permettere di ricostruire il quadro della geonemia italiana delle specie in questione, quanto piuttosto l'esame critico del materiale disponibile e, naturalmente, l'acquisizione di nuovi dati. Non mi risulta, peraltro, che esistano in letteratura citazioni relative all'Italia di *T. atra* var. *ignobilis* auctt., che pure non potrebbero venire riferite acriticamente a *T. ignobilis* Klug. Sono dunque di un certo interesse i seguenti reperti, tutti provenienti dal settore occidentale delle Alpi, che rappresentano i primi dati certi, per il territorio italiano, di questa specie:

Piemonte: Upega, 1300 m, 6.VII.1988, 2 ♀ ♀, lg. Pesarini, in coll. Pesarini; Pietrabianca di Bussoleno, 900 m, 16.VI.1980, 1 ♀; 1.V-6.VI.1981, 1 ♀, lg. Boffa, risp. in coll. Pagliano e Pesarini; Santuario di Oropa, 1.VII.1929, 2 ♀ ♀, lg. Dodero, in coll. Dodero (Museo di Storia Naturale di Genova); valle d'Aosta: Gressoney, VII.1935, 1 ♀, lg. Alzona, pure in coll. Dodero.

CHEVIN (1974 (77), 1981 (82)) aveva peraltro già segnalato *T. ignobilis* di Montgenèvre, nelle Hautes - Alpes, a pochi chilometri dal confine italiano; e sempre dalle Hautes - Alpes proviene la serie tipica di *T. asperrima*, descritta recentemente (1980) da LACOURT e anch'essa strettamente imparentata con *T. atra*. Allo stesso lavoro si rimanda per una discriminazione delle ♀ ♀ delle tre specie.

Tenthredo atra L.

Nel lavoro citato, LACOURT descrive pure una nuova sottospecie di *T. atra* della Sierra Nevada, *T. atra nevadensis*, che si distinguerebbe da *T. atra atra* « ... par la nervure costale brun foncé, la ponctuation assez forte de la tête qui est mate et la coloration blanche du clypéus largement interrompue au milieu » (pp. 191-192). In base a tali caratteri, un primo sommario esame dei campioni italiani di *T. atra* s.l. farebbe assegnare le popolazioni alpine e padane alla sotto-

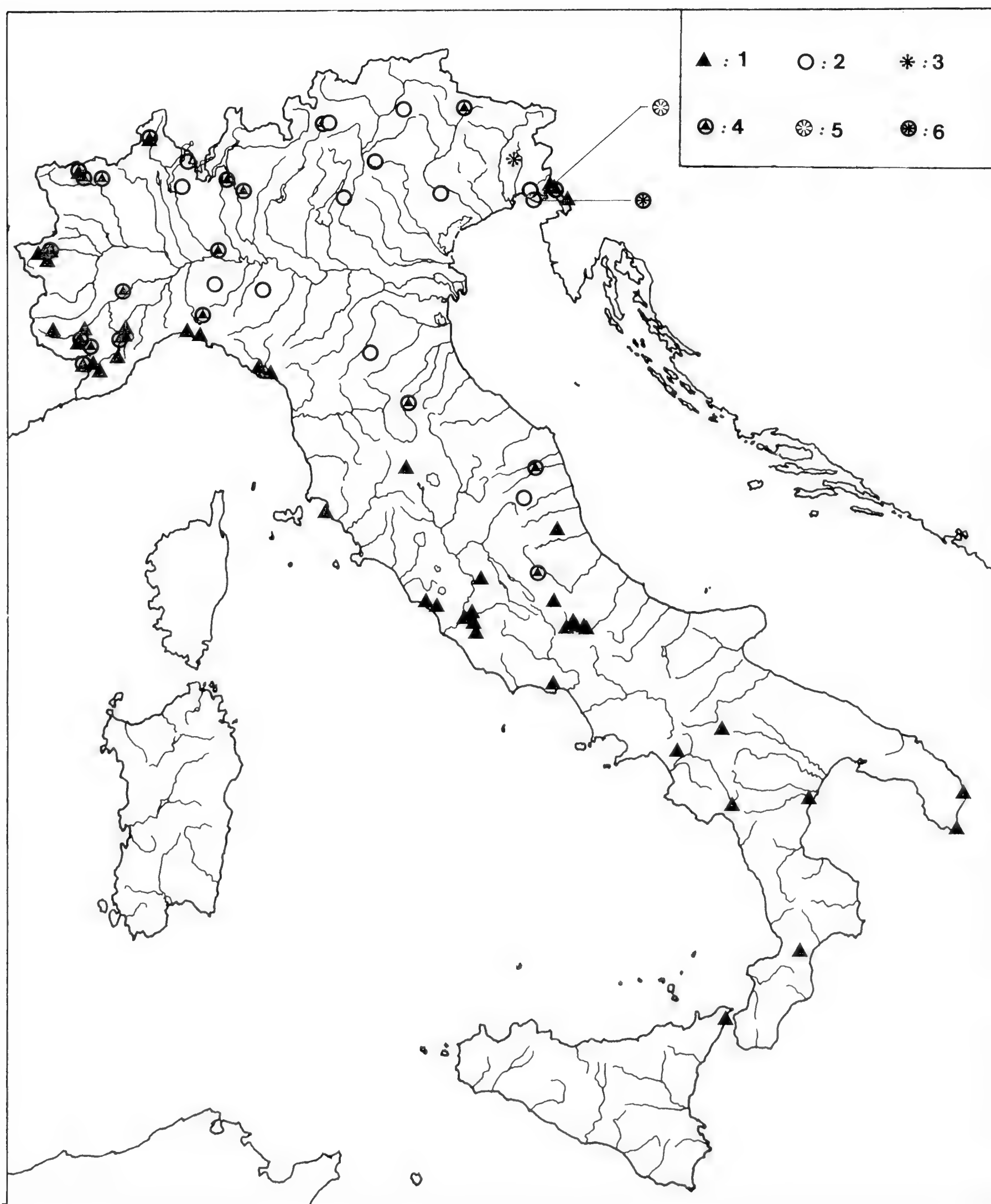


Fig. 1. *Tenthredo bifasciata* Müller in Italia. (1) = *T. bifasciata* s. str.; (2) = *T. b. rossii* (Panzer); (3) = *T. b. violacea* (André); (4) = esemplari con habitus intermedio tra *T. bifasciata* s. str. e *T. b. rossii*; (5) = habitus intermedio tra *T. bifasciata* s. str. e *T. b. violacea*; (6) = habitus intermedio tra *T. b. rossii* e *T. b. violacea*.

specie nominale e quelle della penisola a *T. atra nevadensis*, che non sarebbe dunque un endemita iberico, quanto una sottospecie genericamente meridionale. Una indagine più attenta, però, se da un lato conferma la prevalenza nelle regioni peninsulari di forme scure con punteggiatura del capo grossolana, dall'altro evidenzia come i caratteri in questione (colorazione delle nervature e del clipeo e punteggiatura del capo) non siano sempre correlati tra loro, potendo variare indipendentemente l'uno dall'altro. Così esemplari di *T. atra* s.l. con forte punteggiatura del capo, come in *T. a. nevadensis*, ma con i caratteri di colorazione della sottospecie tipica (come una ♀ proveniente da Vallombrosa, in Toscana, conservata in coll. Doderò, nel Museo di Storia Naturale di Genova) possono comparire a Nord di esemplari del tutto tipici (come una ♀ del Parco Nazionale d'Abruzzo, pure conservata in coll. Doderò) e a Sud di esemplari superficialmente molto simili a *T. a. nevadensis* (come la ♀ proveniente da Ferriere, nel Piacentino, conservata in coll. dell'A., o, ancora, la ♀ proveniente addirittura da Ortisei, in Val Gardena, conservata nel Museo di Storia Naturale di Milano). Dunque non si può affermare che *T. a. nevadensis* sia presente in Italia ed è viceversa più prudente, in attesa di ulteriori dati, considerare le popolazioni italiane di *T. atra* appartenenti alla sottospecie *T. a. atra*.

***Tenthredo rubricoxis* Enslin**

Affine a *T. atra*, *T. rubricoxis* è generalmente ritenuta specie molto rara e non se ne conoscevano a tutt'oggi reperti italiani. Gli amici Campadelli e Pantaleoni ne hanno catturati alcuni esemplari nelle Foreste Demaniali Casentinesi (Appennino Tosco - Romagnolo) e precisamente:

Campigna, 16.V.1986, 1 ♀ (lg. Pantaleoni); Passo della Calla, 1700 m, 26.VI.1986, 2 ♀ ♀; La Stretta, 1275 m, 23.VI.1987, 6 ♀ ♀; ibid., 4.VII.1987, 1 ♀; Foresta della Lama, 720 m, 1.VII.1987, 1 ♀ (lg. Campadelli).

Di *T. rubricoxis* non si conosce il ♂, e la circostanza che tutti gli esemplari in questione siano ♀ ♀ può far pensare che la specie si riproduca per partenogenesi; LACOURT (1980) non esclude tale ipotesi per le affini *T. asperrima* e *T. ignobilis*, di cui si è detto precedentemente. *T. rubricoxis*, che si sviluppa su *Senecio fluviatilis* Walh., *S. nemorensis* L. e *S. sylvaticus* L. (LORENZ & KRAUS, 1957), si riconosce facilmente dalle altre specie italiane del gruppo *atra* con antenne completamente nere (*T. mandibularis* F., *T. moniliata* Kl. e *T. trabeata* Kl., oltre alle citate *atra* e *ignobilis*¹⁾ per avere le anche rosse anziché nere almeno in parte; per il resto la specie in questione è molto simile a *T. atra atra*. Serrulae: SCOBIOLO - PALADE, 1978, p. 187, fig. 139; larva: ENSLIN, 1912, p. 52; LORENZ & KRAUS, l.c., p. 72.

***Tenthredo limbata* Klug**

Al gruppo *atra* appartiene pure *T. limbata*, di cui esistevano solo due citazioni relative al territorio italiano: quella di COSTA (1859), che la descriveva

(¹⁾ Sull'identità di *T. gribodoi* Costa, che secondo KONOW (1905) sarebbe sinonimo di *T. scotica* Cameron, dunque, secondo BENSON (1952), di *T. atra*, sono però necessarie ulteriori indagini.

della Sila col nome di *silensis*, e quella di GHIGI (1904), che la cita anche delle Alpi Piemontesi. A questi si aggiungono ora i seguenti reperti, provenienti dalle Foreste Demaniali Casentinesi:

Passo della Calla, 9.VI.1986, 1 ♀, lg. Pantaleoni; La Stretta, 1275 m, 23.VI.1987, 1 ♀, lg. Campadelli.

Di *T. limbata* non si conoscono la larva né la biologia; pur essendo diffusa su un vasto areale che interessa l'Europa e la Siberia, è ovunque molto scarsa; secondo ENSLIN (1912) « *die Art wird meist nur vereinzelt gefunden* » (p. 58).

***Tenthredo bifasciata* Müller**

I. In Italia

Nella sua recente (1985) revisione delle *Tenthredo* del gruppo *bifasciata*, TAEGER assegna un rango sottospecifico ad *Allantus rossii* Panzer, che altro non sarebbe che la razza centroeuropea, dunque boreale, di *T. bifasciata* Müller.

Pur entrando in contatto, verosimilmente, tanto a Ovest (in Francia) che a Est (in Jugoslavia è presente *T. b. bifasciata*, in Ungheria *T. b. rossii*, oltre alla sottospecie orientale, *T. b. violacea* (André)), sarebbe soprattutto nella regione alpina che si verificherebbe la maggiore introgressione tra i pool genici delle due sottospecie: « *Im Gebiet der Alpen kommt es zum Übergänge von T. bifasciata bifasciata zu bifasciata rossii . . . Zwischen den Unterarten kommen Übergänge vor* » (TAEGER, l.c., pp. 105-106). Tale osservazione, che si basa sull'esame di materiale proveniente dalla Savoia e dal versante settentrionale delle Alpi (l.c., p. 106), è senz'altro valida anche per il versante italiano, dove le forme di passaggio tra le due sottospecie sono anzi particolarmente frequenti.

I fenomeni ora descritti si prestano a diverse interpretazioni. TAEGER ritiene semplicemente che la catena alpina rappresenti la linea di contatto tra *bifasciata* e *rossii* nel settore centrale dell'areale della specie, e difatti esclude la presenza in Italia della seconda (l.c., p. 104). Molte fonti bibliografiche accreditano per contro *T. rossii* tra le specie della fauna italiana e pur dovendo accogliere tali segnalazioni con le dovute cautele, esiste il dubbio fondato di una sostanziale simpatria delle due entità, ragione sufficiente per riconsiderare criticamente l'intero problema.

L'esame di lotti consistenti di popolazioni italiane di *T. bifasciata* s.l. ha permesso di giungere ad alcune conclusioni:

a) il taxon *rossii* è certamente presente in Italia con popolazioni pure; b) lo status sottospecifico di *rossii* è in sostanza confermato, come il carattere boreale di tale sottospecie in contrapposizione a quello meridionale di *bifasciata* s. str.; c) il modello di distribuzione delle due entità è peraltro del tutto diverso da quello precedentemente ipotizzato.

In sostanza la situazione di *T. bifasciata* s.l. in Italia sembra essere la seguente (cfr. Fig. 1): nel settore centro-orientale delle Alpi, nella Pianura Padana e lungo il versante adriatico della Penisola è presente *T. b. rossii*; in Liguria, lungo il versante tirrenico della penisola e comunque in tutta l'Italia meridionale e in Sicilia è presente *T. b. bifasciata*; le Alpi Marittime e più in generale le

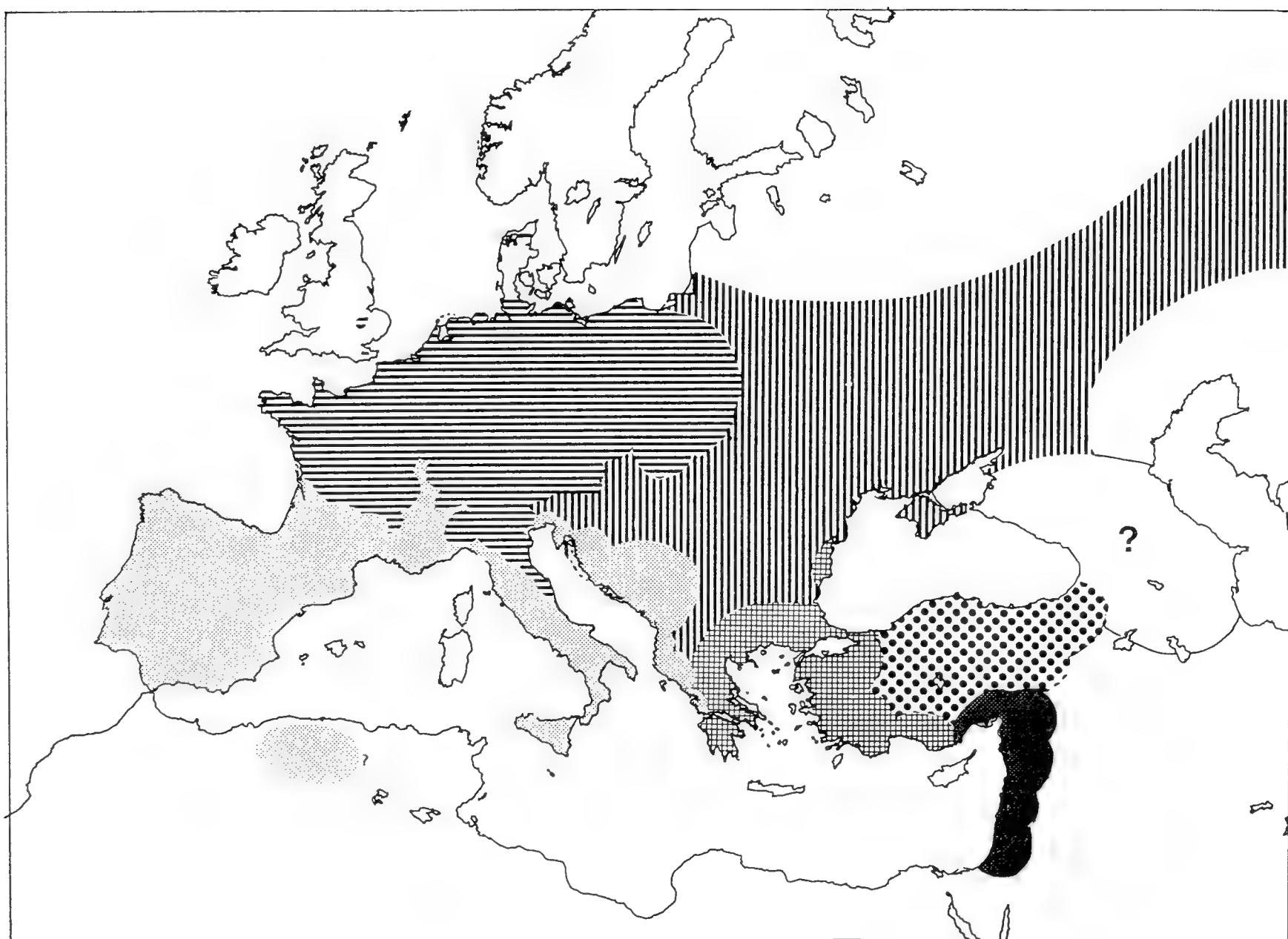


Fig. 2. Distribuzione di *Tenthredo bifasciata* Müller. In grigio è rappresentata la diffusione della forma nominale, a righe orizzontali quella di *T. b. rossii* (Panzer) e a righe verticali quella di *T. b. violacea* (André); l'area in nero rappresenta la diffusione di *T. b.* forma *diversipennis* (Mocsary) (= *T. b. bifasciata* forma b di TAEGER (1985)), quella punteggiata la diffusione di una forma inedita (vedi testo) e quella reticolata un'area di metamorfismo per ibridazione (= *T. b. bifasciata* forma d di TAEGER (l.c.)).

Alpi occidentali da una parte e il Carso triestino dall'altra rappresentano i due "salienti" lungo i quali *T. b. bifasciata* si infila in aree in cui predomina *T. b. rossii*; di conseguenza l'Appennino settentrionale, le Alpi occidentali e in minore misura quelle orientali si configurano come fasce di intergradazione tra le due sottospecie, dove pertanto si potranno osservare tutte le forme di passaggio tra l'habitus di *bifasciata* s. str. e di *rossii*. Va rilevato peraltro che nelle stesse aree in cui le due entità rispettivamente sono rappresentate da popolazioni relativamente pure, è sufficiente spostarsi in direzione delle fasce ibride per veder comparire con frequenza significativa caratteri propri dell'altra sottospecie: nel caso di *bifasciata* s. str. ciò riguarda la pubescenza, che è spesso argentea anziché nera, nel caso di *rossii* le tibie II, in parte nere anziché gialle. E' evidente che siamo in presenza di meccanismi isolanti ancora imperfetti e che è pertanto pienamente giustificato lo status sottospecifico delle due entità nonostante la loro apparente sympatria e la curiosa inversione di areali che si verifica sulle due sponde dell'Adriatico, con *bifasciata* s. str. che in Jugoslavia risale fino a Gorizia e *rossii* che in Italia scende fin quasi all'Abruzzo.

Come sempre avviene in questi casi, assegnare un reperto a questa o quell'altra sottospecie non è sempre agevole; le difficoltà crescono ulteriormente là dove si sovrappongono, per quanto marginalmente, gli areali di altri taxa strettamente imparentati. *T. bifasciata violacea*, ad esempio, sembra spingersi ad occidente sino alla Carnia, incuneandosi tra *bifasciata* s. str. e *rossii*; nella stessa Carnia e nel Cadore è inoltre presente l'affine *T. pseudorossii* Taeger (vedi oltre).

II. Nel Vicino Oriente

Pur ritenendo ragionevolmente sicura l'esistenza di tre sole sottospecie geografiche di *T. bifasciata*, TAEGER (l.c., p. 105) ammette che l'esame di serie numerose provenienti dalle diverse regioni dell'areale della specie potrebbe portare alla descrizione di ulteriori entità a livello sottospecifico. Egli stesso, nella discussione sulla variabilità geografica di *T. bifasciata bifasciata*, arriva a individuare un certo numero di forme che si presentano con discreta costanza su scala regionale; di queste solo una era stata precedentemente descritta, *Allantus viduus* var. *diversipennis* Mocsary, elevata con qualche riserva a rango specifico da BENSON (1968, sub *T. diversipes* Mocsary (sic!)).

Esaminando alcune serie di *T. bifasciata* della Turchia, la prima impressione è che effettivamente le popolazioni orientali appartengono a sottospecie diverse da quelle europee. Il materiale a disposizione, una ventina di esemplari in tutto, è certamente insufficiente per poterne trarre delle conclusioni, ma permette comunque alcune significative integrazioni al quadro proposto da TAEGER (ibid.), e precisamente:

- I) le popolazioni del Medio Oriente sembrano caratterizzate, in modo abbastanza uniforme, dalla punteggiatura del capo e del mesonoto molto debole, come in *T. b. violacea*;
- II) la forma b) di TAEGER (= var. *diversipennis* Mocsary) sembra essere la forma predominante in un'area che oltre a Israele e Libano comprende, secondo BENSON (l.c.), anche la Siria e giunge sino al Tauro meridionale, in Turchia; a favore di tale ipotesi depone la piccola serie, 5 ♀♀ e 1 ♂, proveniente da Namrun (Turchia, prov. İçel, 25 km a Nord di Mersin, 1000 m s.l.m.), campione di una popolazione apparentemente pura;
- III) caratteristica dell'Anatolia sembra essere una forma, che TAEGER non menziona, in cui la punteggiatura di capo e mesonoto è debole, come in *violacea*, ma, nelle ♀♀, l'ipopigio è largamente incavato ai lati del prolungamento mediano, come in *bifasciata* s. str. e a quest'ultima è pure riconducibile per tutti i restanti caratteri. La serie di riferimento, 9 ♂♂ e 3 ♀♀, proviene da Vavuk Geçidi, nella Catena Pontica (Zigana Dağları, prov. Gümüşane, 2025 m s.l.m.) ed è anch'essa molto omogenea per quanto riguarda tutti i caratteri comunemente considerati;
- IV) alla luce di quanto esposto, la forma d) di TAEGER potrebbe rivelarsi un complesso eterogeneo di forme ibride prodotte dal contatto di *violacea* con *bifasciata* s. str. (ad esempio in Albania) e con la forma descritta al precedente punto III (ad esempio nell'area egea) rispettivamente.

In Fig. 2 è illustrata una possibile articolazione in cinque sottounità dell'areale di *T. bifasciata*, corrispondenti agli areali parziali di altrettante ipotetiche entità sottospecifiche; di queste, in pratica, solo *rossii* e *violacea* corrisponderebbero ai rispettivi taxa della letteratura, mentre le restanti tre deriverebbero dallo smembramento di *T. bifasciata bifasciata* sensu TAEGER. Tale proposta va presa come ipotesi di lavoro ed è quindi aperta a future conferme o smentite. In tale ipotesi l'area egea si configura come una zona ibrida in cui si sovrappongono almeno tre entità sottospecifiche; una seconda zona di ampie e complesse intergradazioni è sicuramente l'area caucasica, riguardo alla quale non è però possibile formulare ipotesi di sorta (cfr. TAEGER, l.c., p. 106, sub *T. bifasciata violacea*). Riguardo alla presenza di *violacea* in Romania, pur non avendo visionato materiale proveniente da quella regione, ho ritenuto di interpretare in tal senso, per i caratteri di colorazione forniti, i reperti di *T. bifasciata* cui fa riferimento SCOBIOLO - PALADE (1978, p. 146).

Materiale esaminato (CD = Coll. Dodero, Museo di Storia Naturale di Genova; CM = Coll. Magretti, idem; CPa = Coll. Pagliano; CPe = Coll. Pesarini; MG = Museo di Storia Naturale di Genova; MM = Museo di Storia Naturale di Milano; MR = Museo di Zoologia dell'Università di Roma; MV = Museo di Storia Naturale di Venezia):

Tenthredo bifasciata bifasciata (sensu Taeger)

Piemonte: Upega (CPe), Valle Pesio (MG), Borgo S. Dalmazzo, Sambuco (MR), S. Benedetto Belbo, Borgomale, S. Anna di Valdieri, Pragelato (CPa), Salbertrand, Susa, Bognanco (CD); Valle d'Aosta: Valpelline (CD); Friuli - Venezia Giulia: Sistiana, M. Hermada, Carso Triestino (MV); Liguria: Colle Garezzo (MR), Genova Boccadasse, Ameglia (MG), La Spezia (CD); Toscana: Arbia, Punta Ala (CPe); Lazio: Poggio Mirteto, Palo, Roma dint., Pantano, Marino (CD), Furbara (MG), Settecamini, Formia (MM); Abruzzo: Teramo, M. Tranquillo, Prato La Corte (CD), Cerchio (MG), Scontrone, Opi, Alfedena (MM); Puglia: Otranto (MG), Leuca (MV); Campania: Fiaggine (CD); Basilicata: Lagonegro (CPe), Bosco Policoro (CPe, MM), Lagopesole (MG); Calabria: Monteleone (MG); Sicilia: Messina (CD); Francia: La Brigue (Briga Marittima), Tende (Tenda) (CD); Albania: Lushnja (MM); Turchia: Vavuk Geçidi, Namrun (CPe); Libano: Hazmieh (CPe).

Tenthredo bifasciata rossii

Lombardia: Maccagno (MM), Mercallo (MG, MM), Varzi (MG); Trentino - Alto Adige: Peio (MV), Levico (MG), Val Gardena (MM); Veneto: M. Baldo (MM), Montello (CD); Friuli - Venezia Giulia: Belvedere di Grado, Isola Morosini (MM); Emilia - Romagna: Diolo (CPe), Colli Bolognesi (CPe, MM); Marche: Monti Sibillini (MM).

Tenthredo bifasciata violacea

Friuli - Venezia Giulia: Udine (CD).

T. b. bifasciata x *b. rossii*

Piemonte: S. Benedetto Belbo, Priocca (CPa), Limone, Entracque, Susa (CD), Bognanco (MG); Valle d'Aosta: Blavy-sur-Nus (CPe), Valpelline (CD), St. Vincent (MG); Lombardia: Pavia, Valmadrera (MG), Caprino Bergamasco (CM); Trentino - Alto Adige: Peio (MG); Veneto: Auronzo (MV); Friuli - Venezia Giulia: Sistiana, Aurisina (MV); Liguria: Crocefieschi (MG); Emilia - Romagna: Campigna (CPe); Marche: Macerata (MG); Abruzzo: M. Cagno (MG); Sicilia (? senza ulteriori indicazioni) (MG); Francia: Tende (Tenda) (CD).

T. b. bifasciata x *b. violacea*

Friuli - Venezia Giulia: Sistiana, M. Hermada (MV).

T. b. rossii x *b. violacea*

Friuli - Venezia Giulia: Belvedere di Grado (MM).

Tenthredo pseudorossii Taeger

Si deve a TAEGER (1985) la scoperta dell'esistenza in Europa centro-settentrionale e orientale di una specie inedita di *Tenthredo* superficialmente molto simile a *T. bifasciata rossii* (Panzer) è perciò battezzata dallo stesso A. T. *pseudorossii*. Ancorché ignorata per tanto tempo, la specie in questione sembra essere tutt'altro che rara, tanto che era stata ripetutamente trattata come *rossii* da precedenti autori, quali KONTUNIEMI (1952), che ne descrive la larva, infeu-data a *Sonchus arvensis* L., BENSON (1952), KOCH (1982) e molti altri (cfr. TAEGER, l.c., p. 101).

I seguenti reperti, oltre ad attestare anche in Italia la presenza di *T. pseudorossii*, indicano che l'areale della specie è in realtà ancora da definire e che comunque si estende anche al Vicino Oriente.

Italia, Piemonte: Salbertrand, 12.VI.1921, 1 ♀, lg. Della Beffa, esemplare conservato in Coll. Dodero, Museo di Storia Naturale di Genova²; Veneto: Falcade, VII.1932, 1 ♀, lg. Rocca, pure in Coll. Dodero; Cortina (« mesofilo 2 »), senza altre indicazioni, 1 ♀, Museo di Storia Naturale di Venezia; Friuli-Venezia Giulia: Carnia, P. d'Arta, 18-25.VI.1965, 1 ♂, lg. Levrini; Arta, V.1966 1 ♀, lg. Giordani Soika, anch'essi nel Museo di Venezia.

Turchia: « Byth. Olympus » [Ulu Dag], prov. Bursa, 12-15.VIII.1910, 1 ♀, lg. Fahringer, Museo di Storia Naturale di Milano.

Per la discriminazione di *T. pseudorossii* dalle restanti specie del gruppo *bifasciata*, si rimanda alla citata revisione di TAEGER.

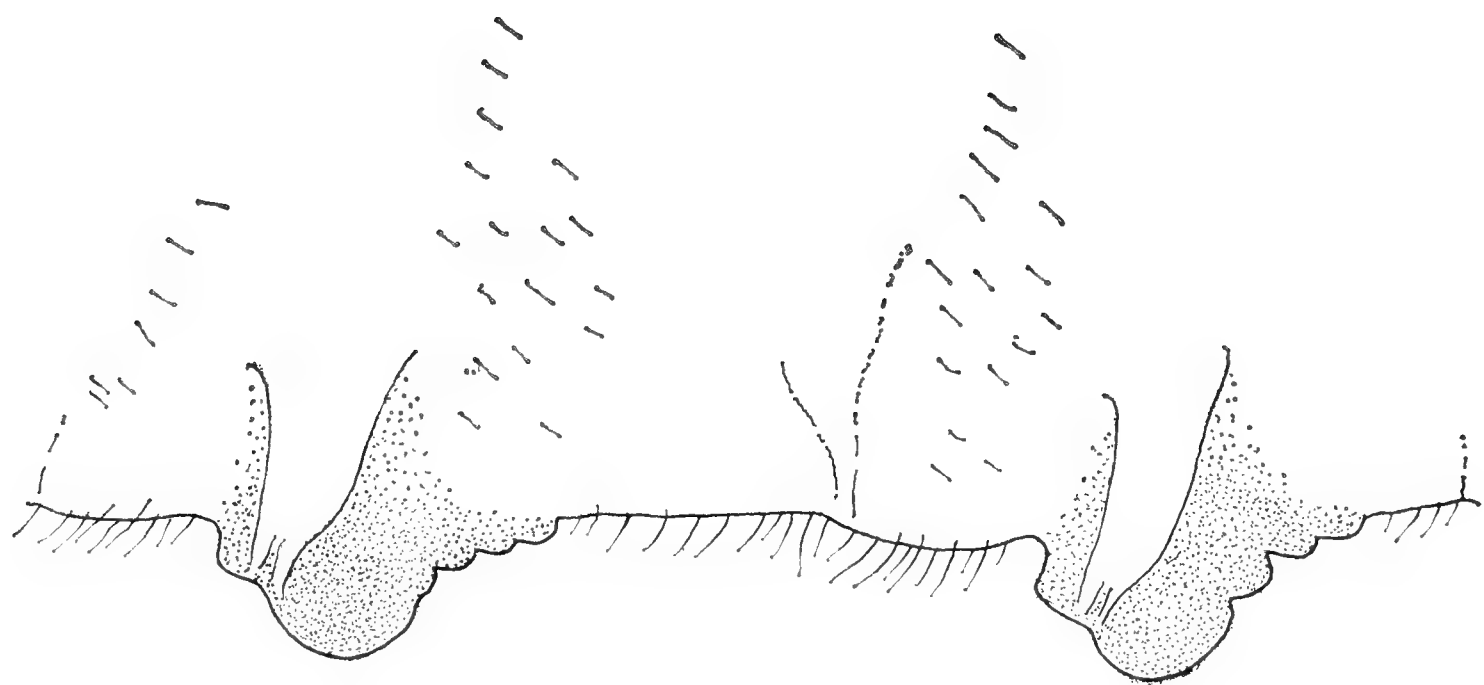
Tenthredo sp. cfr. *frauenfeldii* Giraud

Nell'estate 1987, nel corso di una campagna di cacce appenniniche, campionai in discreta serie una *Tenthredo* del gruppo *zonula* sensu BENSON (1968) che sulle prime non esitai ad assegnare a *T. frauenfeldii* Giraud, ma che successivamente si è rivelata di grande interesse per via del suo difficile inquadramento tassonomico.

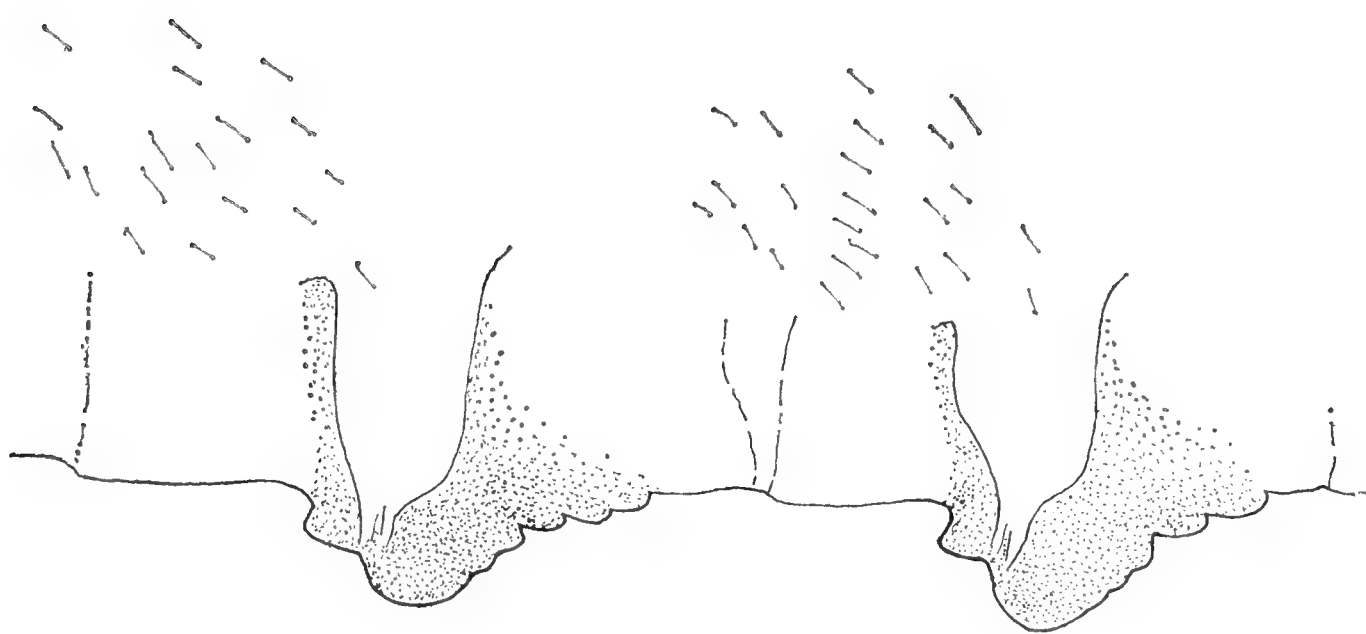
Gli esemplari in questione, 25 ♀♀ e 17 ♂♂, furono da me catturati a vista su fiori di *Ranunculus* sp. (forse *acris* L.) ai Prati di Tivo, 1500 m circa, nel massiccio del Gran Sasso, e in base alle chiavi di uso corrente risultarono appartenere tutti alla var. *giraudi* Enslin di *T. frauenfeldii*. Detta varietà veniva caratterizzata dallo stesso ENSLIN (1912) dall'avere, oltre il V, anche il VI segmento addominale giallo, modulazione cromatica peraltro già nota a quei tempi (« *die auch schon dem Autor der Art bekannt war* », l.c., p. 78) e ciò era appunto quanto si poteva osservare, senza eccezione, negli esemplari dei Prati di Tivo.

L'aver raccolto in serie omogenea una "varietà" non poteva non insospettire circa il vero status di quest'ultima, e difatti l'esame della terebra rivelò significative differenze nella conformazione delle serrulae tra le ♀♀ dei Prati di Tivo e di *frauenfeldii* s. str. di diverse provenienze. Qualora tale carattere fosse stato riscontrato costantemente nella var. *giraudi*, vi sarebbero stati fondati motivi per ritenere quest'ultima una specie valida a tutti gli effetti.

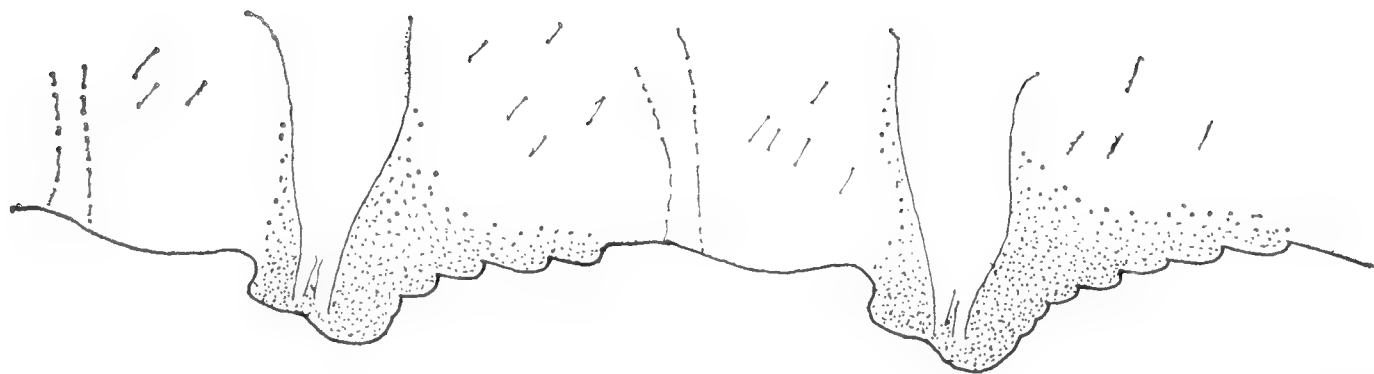
(²) L'esemplare in questione corrisponde alla « *dunkle Form* » di TAEGER (l.c., p. 101-102).



3a



3b



3c

Fig. 3. Serrulae di *Tenthredo frauenfeldii* sensu lato. 3 a: *T. frauenfeldii* "forma" *giraudi*, Carso Triestino, M. Hermada; 3 b: *T. frauenfeldii* "forma" *giraudi* (?), Gran Sasso, loc. Prati di Tivo; 3 c: *T. frauenfeldii* s. str., Carso Triestino, M. Hermada (Disegno di Carlo Pesarini).

L'esame di una piccola serie proveniente dal Carso Triestino e conservata nel Museo di Storia Naturale di Venezia, nella quale sono presenti sia la forma nominale che la var. *giraudi*, ha confermato in parte tale ipotesi, ma al tempo stesso non ha sciolto del tutto i dubbi sull'identità degli esemplari appenninici. Nella var. *giraudi* del Carso Triestino, infatti, le differenze nella conformazione delle serrulae già riscontrate tra la var. *giraudi* del Gran Sasso e *frauenfeldii* s. str. (Fig. 3 b, 3 c) sono risultate ancora più marcate (Fig. 3 a, 3 c); pertanto se è verosimile che la var. *giraudi* del Carso sia una specie distinta da *frauenfeldii* s. str., non si è avuta la prova che la stessa conclusione valga anche per le popolazioni appenniniche. Ad esse, comunque, va probabilmente ricollegato quell'*Allantus frauenfeldii* var. *montanus* descritto da DE STEFANI (1883) di Sicilia che ENSLIN (l.c.) collocò arbitrariamente tra i sinonimi di *Allantus merceti* Konow. Dell'intricata questione si sta occupando TAEGER (MÜLLER, 1987; TAEGER, 1988, in litteris), che ha intrapreso la revisione delle *Tenthredo* del gruppo *zonula-frauenfeldii*; a tale lavoro, di imminente pubblicazione, si rimanda per una trattazione in sede più autorevole dell'intero problema.

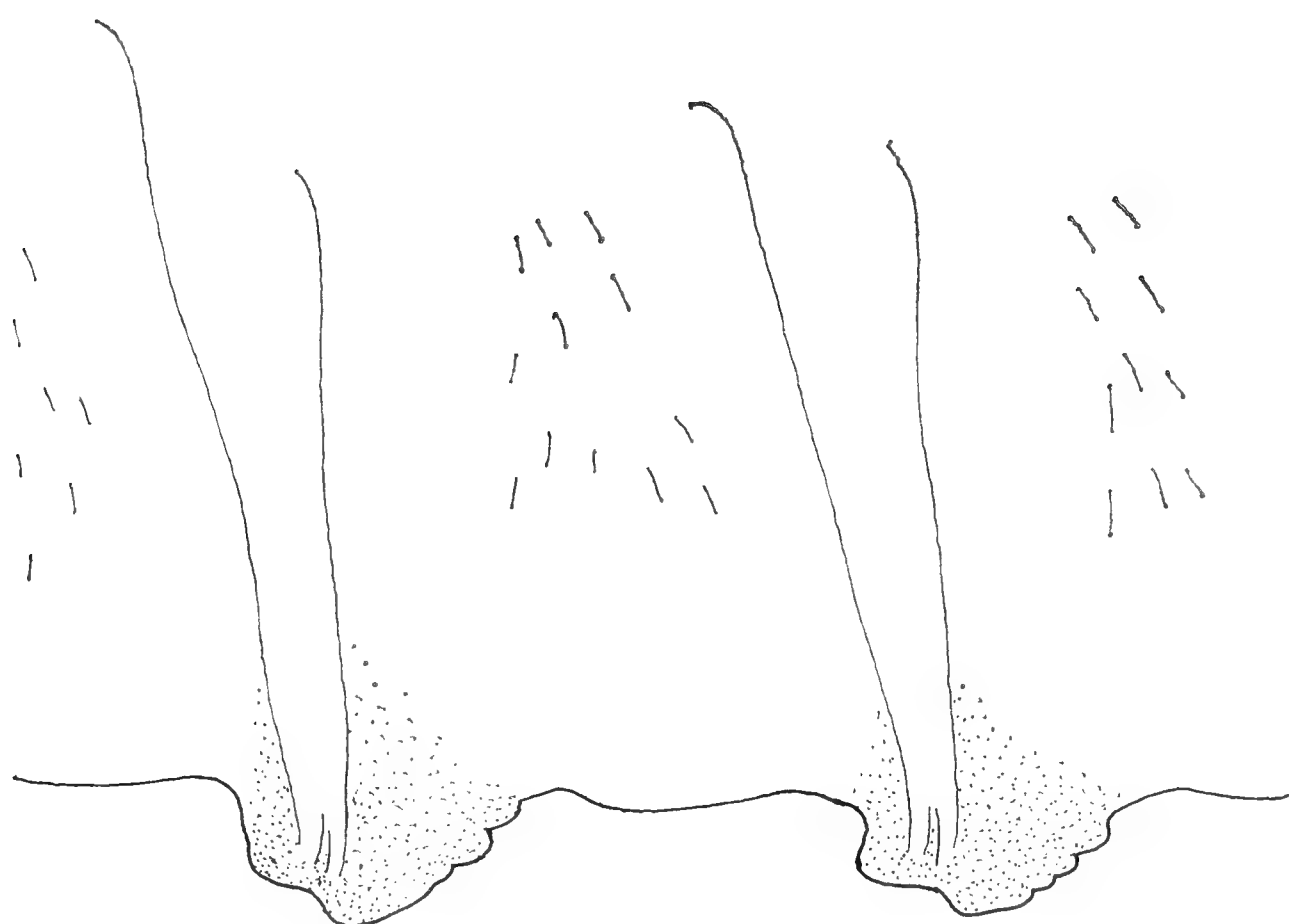
***Tenthredo diana* Benson, stat. nov.**

Descritta come *T. maculata* subsp. *diana* da BENSON (1968), se ne conosceva a tutt'oggi solo la serie tipica, in tutto 3 ♀ ♀ provenienti dall'Emilia - Romagna e dalle Marche.

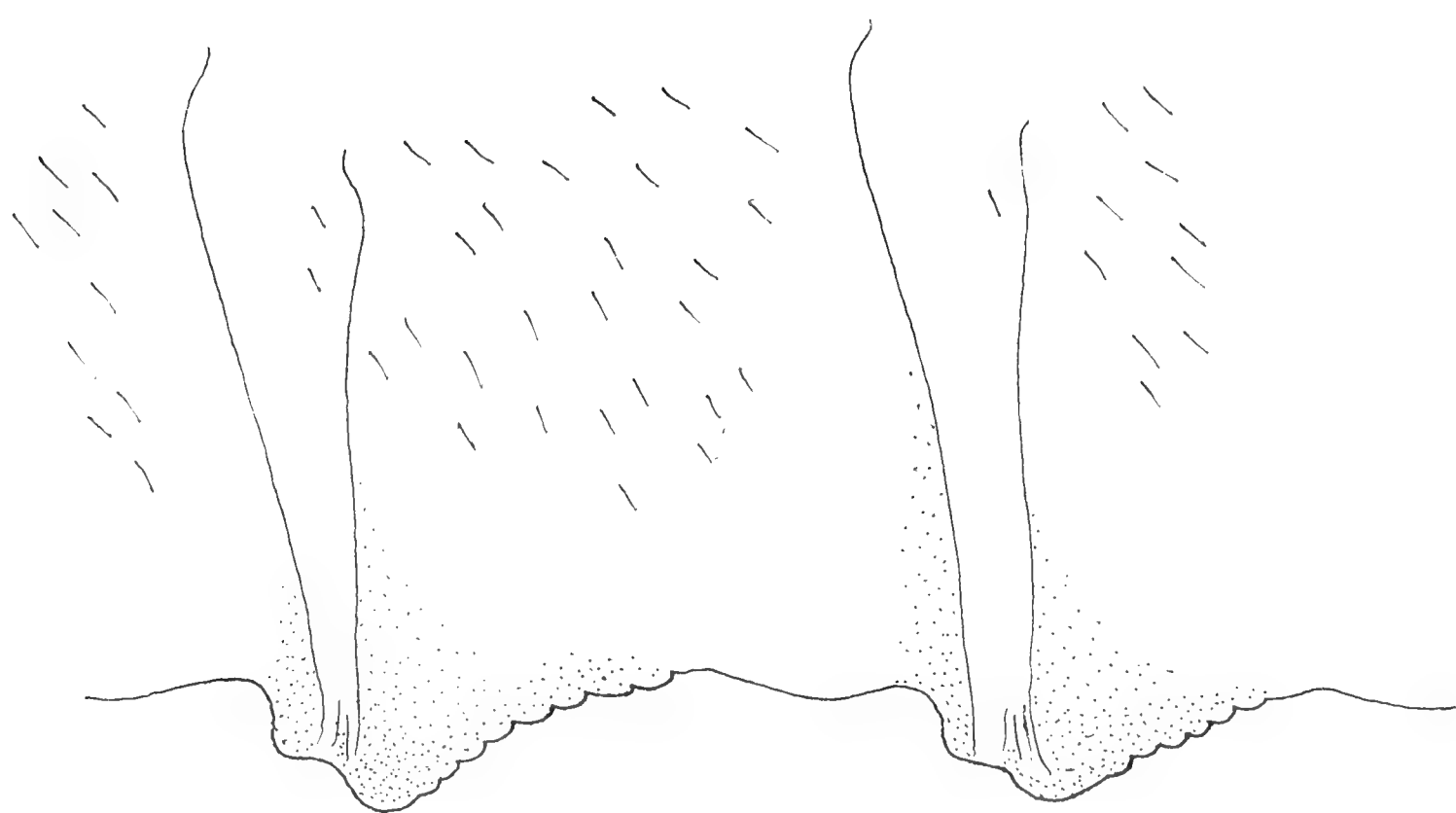
L'accertata compresenza, nell'Appennino Tosco - Romagnolo, della sottospecie nominale, *T. maculata maculata* Geoffroy, e di *diana*, mi aveva indotto a riconsiderare criticamente lo status tassonomico di quest'ultima; alcune fortunate circostanze che successivamente mi hanno permesso di radunarne una piccola serie (sempre, però, di sole ♀ ♀) ed il confronto con un discreto lotto di *maculata* s. str., hanno poi fornito dati morfologici e geonemici sufficienti a dimostrare che le due entità sono distinte a livello specifico. Data la rarità (forse solo presunta) di *T. diana* e la diagnosi piuttosto sommaria fornitane da BENSON (l.c.), viene ridescritta di seguito la ♀ dell'entità in questione.

Capo nero, tranne clipeo, labbro superiore, 3/4 basali delle mandibole e palpi, di colore giallo-crema, e apice delle mandibole, di colore rosso-ruggine; antenne nere alla base, dal IV articolo brunicce. Clipeo a superficie generalmente piuttosto convessa, specie ai lati dell'incisione mediana, che è acuta o debolmente ottusa. Fronte piana, creste soprantennali poco pronunciate, non superanti il diametro di un ocello, tempie convesse, non o appena dilatate dietro gli occhi, area postocellare rilevata e nettamente bipartita da una carena sagittale più o meno pronunciata. Carena postgenale sviluppata fin dal vertice, svanita in corrispondenza dell'area postocellare. Microscultura reticolato-granulosa ovunque pronunciata tranne che sulle parti boccali, più densa sulle tempie, che appaiono opache, un po' più lassa sul vertice, dove è accompagnata da una rada punteggiatura. Pubescenza ovunque folta e lunga più del II antennumero, di colore biondo-cinerino.

Torace nero, tranne il bordo posteriore e gli angoli del pronoto, le tegule, il mesoscutello e le metapleure, di colore giallo. Microscultura reticolato-granulosa particolarmente forte sulle mesopleure, più o meno pronunciata sul protorace e sul lobo mediano del mesonoto, sostituita o più raramente accompagnata da una



4a



4b

Fig. 4 a. Serrulae di *Tenthredo diana* Benson (stat. nov.), Civitella di Romagna. - Fig. 4 b. Serrulae di *Tenthredo maculata* Geoffroy, Appennino Tosco - Romagnolo, Foresta di Campigna loc. La Stretta. (Disegno di Carlo Pesarini)

punteggiatura piuttosto densa sui lobi laterali dello stesso. Scutello più o meno fortemente rilevato, a formare talora una sorta di cuspidе trasversa. Zampe: articoli basali (anche + trocanteri + trocantelli) e femori del I e II paio più o meno estesamente gialli anteriormente, quelli del III paio neri; tutte le tibie e i tarsi di colore giallo, spesso le tibie III brunite all'apice. Pubescenza del torace e delle appendici ovunque folta ma più corta di quella del capo, biondicia dorsalmente, di colore argenteo ventralmente e sui lati. Ali ialino-ambrate, costale gialla, subcostale pure gialla bordata di nero posteriormente, stigma bruno scuro.

Addome nero, tranne: una macchia ai lati del I e II tergite, i segmenti III e IV per intero, una piccola macchia ai lati del V e VI tergite e, superiormente, il bordo posteriore dei tergiti VI, VII e VIII, di colore giallo. Ipopigio di norma appena sporgente dal VI sternite e posteriormente pressoché rettilineo e solo molto debolmente emarginato. Serrulae, vedi Fig. 4 a. Microscultura reticolato-rugosa ovunque molto pronunciata, punteggiatura indistinta, pubescenza folta ma molto corta e appressata al corpo, poco evidente.

Tenthredo diana, di cui non si conosce la biologia, è presente nell'Appennino Tosco-Romagnolo e Marchigiano e nel massiccio del M. Amiata, in Toscana; *T. maculata* s. str., oltreché in tutto il Nord Italia e in Europa centro-occidentale, è pure presente nell'Appennino Tosco-Romagnolo e Umbro-Marchigiano e a Sud si spinge fino al massiccio della Sila, in Calabria. Le due entità, per quanto strettamente imparentate, hanno evidentemente sviluppato meccanismi di isolamento riproduttivo che ne consentono una parziale simpatria.

T. diana si riconosce facilmente da *maculata* anche considerando i soli caratteri di colorazione (antenne, apici delle tibie e tergiti addominali, tranne il IV e il V, di colore nero nella seconda, più o meno estesamente gialli in *diana*); inoltre in *maculata* il clipeo è più o meno largamente inciso ad arco di cerchio, la microscultura del capo è superiormente poco pronunciata e l'area postocellare è in genere ribordata posteriormente e poco convessa, come del resto il mesoscutello, a differenza di quanto si osserva in *diana* (si veda la precedente descrizione); il confronto delle serrulae della terebra ne consente comunque una discriminazione al di là di ogni dubbio (Fig. 4).

Non ho fornito di proposito una tabella comparativa dei caratteri diagnostici di *diana* e *maculata*, in quanto quest'ultima presenta, in Europa centrale e orientale, una grande varietà di forme di cui MUCHE (1968) e SCOBIOLO - PALADE (1978) forniscono una chiave mutuata da ZIRNGIEBL (1940). Ora non è escluso che i caratteri cromatici che le caratterizzano non si accompagnino a più o meno lievi differenze anche morfologiche e di microscultura, né che alcune di tali "varietà" non siano in realtà dei taxa validi almeno a livello sottospecifico.

Va anzi notato che molto probabilmente la var. *coloris* descritta da ZIRNGIEBL deve essere identificata proprio con *T. diana*. Purtroppo non è possibile sciogliere ogni eventuale dubbio in proposito perché, come mi informa FISCHER (1988, in litteris), non vi è traccia della citata var. *coloris* nelle collezioni del Naturhistorisches Museum di Vienna³. Per contro, mi è possibile smentire quanto afferma

(³) Il nome *coloris* (ZIRNGIEBL, 1940) avrebbe la priorità sul nome *diana* (BENSON, 1968) ma, ai sensi dell'art. 45 (g), nota 1), del Codice Internazionale di Nomenclatura Zoologica, III ed., 1985, tale nome non è disponibile in quanto evidentemente riferito dall'Autore ad una entità di rango infraspecifico.

QUINLAN (1974) a proposito del tipo di *diana* (« *Although the holotype is published as being housed in the MCSNGD, Genoa, it cannot be traced in their collection* »); l'equivoco era sorto a causa del fatto che l'esemplare in questione è conservato in Coll. Dodero, depositata presso il Museo di Genova, e non in quella generale dello stesso Museo. Un interrogativo permane per quanto riguarda la località tipica: BENSON (l.c.) riporta « *Emilia, Mt. Bretra* », che in QUINLAN (l.c.) diventa « *Emilia, Mt. Breta* », ma, a quanto pare, né l'uno né l'altro nome corrispondono ad alcuna località nota; in realtà la grafia con cui è vergato il cartellino di località è praticamente illeggibile.

Materiale esaminato (CC = Coll. Campadelli; CD = Coll. Dodero, Museo di Storia Naturale di Genova; CPa = Coll. Pagliano; CPe = Coll. Pesarini):

Tenthredo diana

Emilia-Romagna: M. Bretra (?) (holotypus, CD), Premilcuore, Le Cullacce, La Burraia (CC), Civitella di Romagna (CPe); Toscana: Marradi loc. Campigno, M. Amiata (CPe).

Tenthredo maculata

Piemonte: Colle delle Finestre (CPa, CPe); Veneto: M. Baldo (CPe); Emilia-Romagna: Foresta di Campigna loc. La Stretta (CC); Marche: P.so di Gualdo; Calabria: Camigliatello Silano; Francia, Hautes-Alpes: Ailefroide; Jugoslavia, Slovenia: Trnovski Gozd (Selva di Tarnova) (tutti in CPe).

***Tenthredo temula* forma *celtica* Benson**

In un precedente lavoro (PESARINI, 1982-83) espressi alcune perplessità sulla decisione di ZOMBORI (1979) di considerare *Tenthredo celtica* Benson sinonimo di *T. temula* Scopoli. Pur ammettendo che la questione non è certamente semplice come ipotizzato da BENSON (1959 b, 1966, 1968), secondo il quale le due entità sarebbero vicarianti e, in particolare, solo la prima sarebbe presente a Sud delle Alpi, l'esame di lotti consistenti di materiale italiano di *T. temula* s.l. mi sembra non permetta di escludere l'esistenza di due taxa in luogo di uno.

Innanzitutto l'affermazione di ZOMBORI (l.c., p. 240) secondo cui « BENSON stated that only *T. temula celtica* inhabits Italy » non è vera in assoluto. In un primo tempo, infatti, BENSON (1959, p. 322-323), dimostrava di conoscere l'esistenza di *T. temula* s. str. quanto meno nell'arco alpino e, a giudicare dalla cartina di distribuzione (l.c., p. 323, Fig. 2), addirittura in tutte le regioni a Nord del Po. Solo in un secondo tempo lo stesso A. (1966, 1968) indicò genericamente « Italy » per *T. temula celtica*, senza accennare minimamente alla presenza di *T. temula temula* nelle regioni settentrionali del Paese.

In ogni caso l'esistenza a Sud delle Alpi di esemplari riferibili alla forma nominale non è di per sé un motivo sufficiente per ipotizzare una sostanziale simpatria di questa con *celtica*; e il fatto che entrambe si riscontrerebbero « *side by side in Italy* » (ZOMBORI, ibid.) si potrebbe spiegare con l'esistenza nel nostro Paese di fasce ibride tra le due entità, ipotesi del resto non incompatibile con quanto afferma lo stesso ZOMBORI, secondo il quale « *proceeding southward the two colour-forms reach an equilibrium, and later, e.g. in Calabria, give away to the lighter form* » (ibid.). Certamente tale variazione su scala geografica potrebbe avere un carattere clinale, rivelarsi cioè una variazione geografica continua che non giustifica la creazione di taxa sottospecifici; non sono comunque d'accordo con

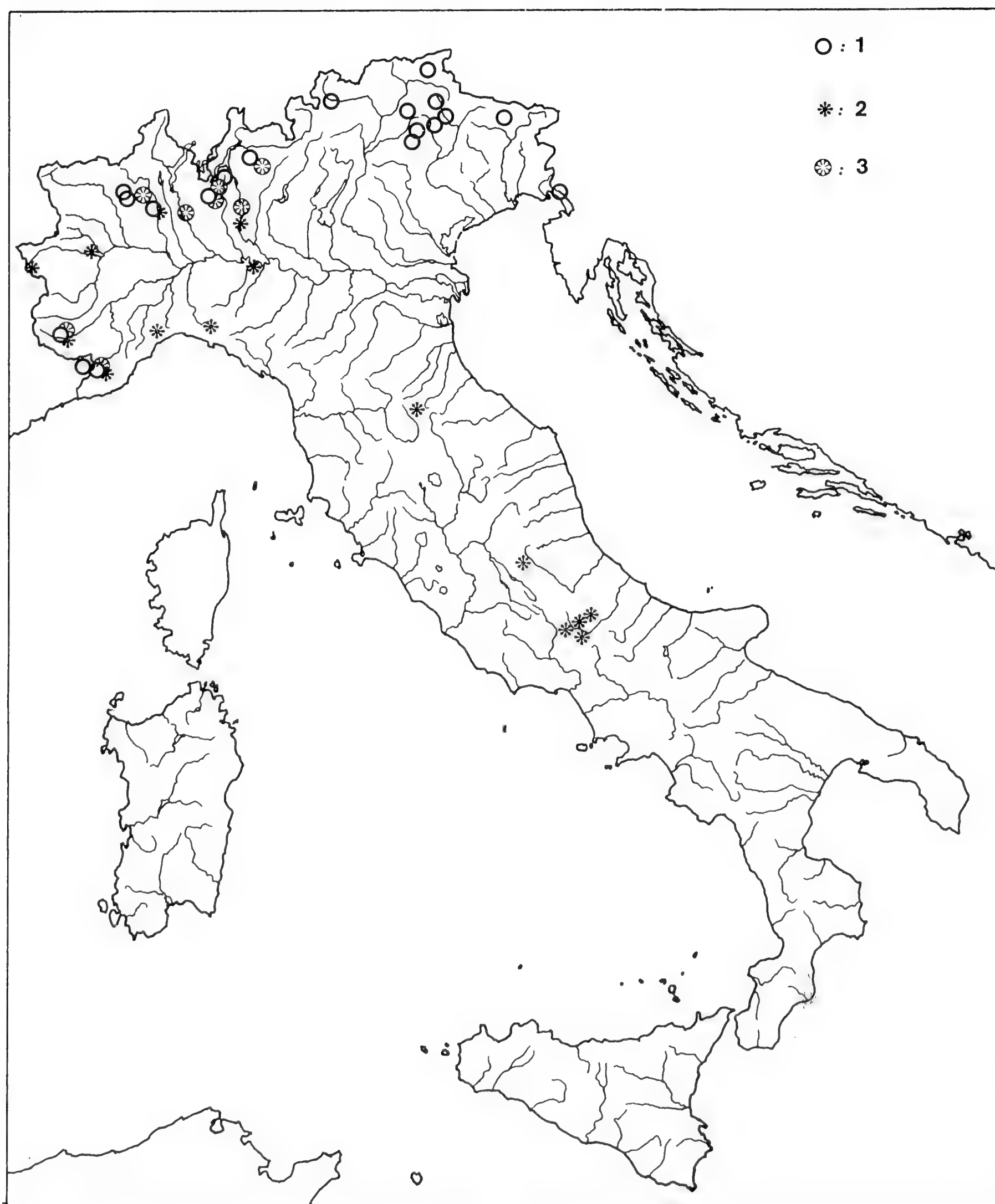


Fig. 5. Geonemia italiana di *Tenthredo temula* sensu lato. (1) = esemplari con habitus di *T. temula* s. str.; (2) = habitus di *T. temula* forma *celtica*; (3) = habitus intermedio tra le due forme.

ZOMBORI quando afferma che « *Tenthredo temula temula Scopoli, 1763, and Tenthredo temula celtica Benson, 1963, are synonymous because every gradation occurs both in colour and in structural⁴ feature* » (ibid.) soprattutto perché tali osservazioni non sono accompagnate dai necessari dati sulla provenienza dei reperti. L'esame di una discreta quantità di materiale italiano ha infatti rivelato, alla luce delle rispettive località di provenienza, una situazione alquanto diversa da quella riscontrata da ZOMBORI (cfr. Fig. 5).

La frequenza di forme intermedie sembra essere caratteristica delle regioni nord - occidentali, dove pure si osserva la compresenza delle due forme; ciò non è incompatibile con l'esistenza di due taxa distinti a livello sottospecifico, *T. temula temula*, centroeuropea e attestata anche nel versante meridionale delle Alpi orientali; e *T. temula celtica*, mediterraneo - atlantica, attestata in tutta la penisola e nella maggior parte della Pianura Padana. E' però necessario l'esame di consistenti lotti di *T. temula* s.l. di provenienza extra - italiana per poter giungere a delle conclusioni sullo status di *Tenthredo celtica* Benson.

Materiale esaminato (valgono le abbreviazioni usate in precedenza, cfr. *Tenthredo bifasciata*):

Tenthredo temula s.l.

Piemonte: Sambuco (MR), Upega (CPe), Cesana Torinese (MV), Ghislarengo, Piedicavallo (CPe), Santuario d'Oropa (CD, CPe), Tavigliano, Val Sessera (CD); Lombardia: Turbigo (CD), Caslino al Piano, Fecchio, Spino d'Adda (CPe), Cassano d'Adda, Asso, Branzi, Gerola Alta (CD); Trentino - Alto Adige: Val Venosta tra Lasa e Sluderno (MV), Ortisei (CPe, MM), Campo Tures (CD); Veneto: M. Sagron, Falcade (CD), M. Civetta, S. Vito di Cadore, Cortina d'Ampezzo (MV); Friuli - Venezia Giulia: Arta, Sistiana (MV); Liguria: Sassello, M. Antola (CD); Emilia - Romagna: Piacenza, Sasso Fratino (CPe); Abruzzo: Sella di Corno, Prato La Corte, Val Fondillo (CD), Palena Stazione (MM); Francia, Alpes - Maritimes: Tende (Tenda); Jugoslavia, Slovenia: Postojna (Postumia) (entrambe in CD).

***Tenthredo succincta* Lepeletier**

Si deve a CHEVIN (1983) la riabilitazione di *T. succincta*, praticamente da sempre considerata sinonimo di *T. marginella* F. Lo stesso CHEVIN (l.c.) cita inoltre *T. succincta* di Piemonte ed è questa, a tutt'oggi, l'unica segnalazione sicura per il territorio italiano, potendo riferirsi le precedenti segnalazioni di *Allantus succinctus* (Lep.) di MAGRETTI (1882) e COBELLI (1903) tanto a *T. succincta* quanto a *T. marginella*.

Poiché CHEVIN (l.c., p. 18) afferma, a proposito di *T. succincta*, che « *la répartition européenne de cette espèce reste à préciser... Il semble que succincta ait une tendance plus méridionale que marginella* », mi sono proposto di fornire un primo quadro della distribuzione in Italia della specie in questione esaminando un discreto numero di esemplari di *T. marginella* auctt. conservati sia in collezioni di istituti che private. Si riportano di seguito i dati topografici relativi (con il segno ? sono indicati i reperti la cui determinazione è da considerare dubbia).

(4) *T. celtica* si distingue da *temula* s. str. non solo per una più estesa colorazione gialla dei tergiti, ma anche per lo scutello fortemente rilevato, a formare, di profilo, un angolo quasi retto (BENSON, 1968).

Piemonte: Varinella, Arquata Scrivia, Cassano Spinola, Gavi, Limone Piemonte, Borgo S. Dalmazzo, Andonno, Moiola?, Castiglione Torinese, Sangano, Salice d'Ulzio, Piedicavallo, Bognanco; Valle d'Aosta: Charvensod?, Valpelline?; Lombardia: Maccagno?, Canonica d'Adda, Brembate, Marone; Trentino - Alto Adige: Pinzolo, Madonna di Campiglio, Levico Terme, Campo Tures; Veneto: M. Baldo?, Negrar; Friuli - Venezia Giulia: Piano d'Arta, Sistiana; Liguria: Laigueglia, Vado L., Albisola, Genova, N.S. della Vittoria, Staglieno, Sturla, S. Desiderio di Bavari; Emilia - Romagna: Civitella di Romagna, Sasso Fratino; Toscana: Palazzuolo sul Senio, Lippiano; Lazio: M. Meta; Francia, Alpes - Maritimes: Tende (Tenda); Jugoslavia, Croazia: Pula (Pola).

T. succincta, di cui non conosco eventuali dati biologici, si riconosce abbastanza agevolmente da *T. marginella* per la punteggiatura più fine e spaziata delle mesopleure e del mesonoto, e per il solco longitudinale del lobo mediano di quest'ultimo molto più pronunciato (appena indicato in *marginella*). Le ♀ ♀ delle due specie differiscono poi per la forma delle serrulae (vedi CHEVIN, l.c., p. 17, Figg. 2, 3).

Tenthredo albiventris picena Pesarini

Nel primo volume del suo monumentale trattato sugli Imenotteri paleartico - occidentali, ANDRÉ descrisse un *Allantus trivittatus* del Caucaso appena un anno dopo (1881) che MOCSÁRY ebbe descritta la stessa entità col nome di *Allantus albiventris* (1880). Pur essendo preoccupato in *Tenthredo* da *T. albiventris* (= *Periclista a.*) Klug, 1814, il nome di MOCSÁRY deve essere considerato valido e prioritario su quello di ANDRÉ, in quanto il taxon *Tenthredo albiventris* Klug era stato rimosso dal genere *Tenthredo* L. assai prima (1881) che *Allantus albiventris* Mocsáry mutasse il nome in *Tenthredo a.* (1912). *Tenthredo albiventris picena* è dunque il nome corretto dell'endemita appenninico da me descritto recentemente (1989) col nome *Tenthredo trivittata picena*⁵.

L'interesse di questa entità è dato dalla grande discontinuità tra il suo areale e quello della sottospecie nominale, nota solo del Caucaso e delle regioni limitrofe. Per tale motivo ogni eventuale nuovo dato sulla distribuzione delle due sottospecie va registrato con attenzione.

In Coll. Dodero (Museo di Storia Naturale di Genova) sono conservate, col nome di *Allantus dabli* Klug, tre ♀ ♀ di *T. a. picena*. Di esse, due provengono, come la serie tipica, dall'Appennino centrale e precisamente dal Parco Nazionale d'Abruzzo (M. Palombo, 4.VII.1936, lg. Luigioni; Rio Le Forche, s.d., coll. incogn.); la terza proviene invece dall'Appennino Tosco - Romagnolo (Campigna, M. Falterona, VIII.1929, lg. Zangheri)⁶. E' interessante notare che gli esemplari del Rio Le Forche e del M. Falterona si collocano ai due estremi del campo di variabilità cromatica della sottospecie (cfr. PESARINI, 1989), ampliandone anzi i limiti precedentemente conosciuti. L'esemplare del Rio Le Forche, infatti, presenta le seguenti parti gialle: i tergiti I, IV - VI, VIII e IX per intero, una macchia gialla su ciascun lato del II, i 3/4 distali del III e la metà distale del VII; per contro lo scutello è macchiato di giallo solo ai lati e le mesopleure lo sono

(5) Ringrazio il collega Taeger, dell'Institut für Pflanzenschutzforschung di Eberswalde, DDR, per avermi gentilmente segnalato il disguido nomenclatoriale (1988, in litteris).

(6) Quindi anche le segnalazioni di *Allantus dabli* di LUIGIONI (1935) e di *Tenthredo dabli* di ZANGHERI (1969) sono probabilmente errate e da riferire invece a *T. a. picena*.

solo impercettibilmente. L'esemplare del M. Falterona non si discosta invece dall'habitus degli esemplari più scuri della serie tipica.

Essendo la sottospecie nominale di *T. albiventris* entità caucasica, dunque estranea alla fauna europea, è probabile che il DODERO, nel determinare i tre esemplari di *T. a. picena*, non l'abbia nemmeno presa in considerazione, assegnandoli poi ad *Allantus dahli* per via della colorazione, in effetti molto simile. Quest'ultima entità (con la var. *amasiensis* Kriechbaumer, elevata al rango di specie da BENSON (1968) e ancor più simile a *T. a. picena* per via delle tegule marginate di giallo) non ha in realtà alcuna parentela con *T. albiventris*, essendo inclusa nel genere *Cuneala* Zirngiebl, caratterizzato dal forte sviluppo delle parti boccali e dalla forma del labrum, anteriormente diritto o solo debolmente convesso.

Tenthredo umbrica Benson

Appartenente, come la precedente specie, al gruppo *arcuata-schaefferi* sensu TAEGER (1985), *T. umbrica* fu descritta da BENSON (1959) su una piccola serie di esemplari di entrambi i sessi provenienti dai M.ti Sibillini, a tutt'oggi gli unici esemplari noti in assoluto. Ad essi si aggiungono ora i seguenti, da me catturati in Abruzzo:

Alta valle del F. Vomano, m 1160, 11.VII.1987, 1 ♀; massiccio del Gran Sasso, località Prati di Tivo 1500 m circa, 9.VII.1987, 6 ♀♀ e 1 ♂.

Le specie europee del gruppo *arcuata-schaefferi* sono per la maggior parte strettamente imparentate tra loro, tanto da far supporre, in alcuni casi, di essere in presenza di vicarianti ecologiche poco o punto differenziate morfologicamente. Ad un esame accurato, comunque, *T. umbrica* si riconosce abbastanza agevolmente dalle specie consimili. Ai caratteri indicati da BENSON e cioè spazio malare uguale o superiore ai due terzi della distanza tra le fossette antennali e, nella ♀, serrulae molto pronunciate, in forma di denti acuminati (l.c., p. 101, Fig. 10) si aggiungono le guance fortemente depresse, la punteggiatura del vertice relativamente spaziata, la colorazione delle ali variabile, ma in genere più o meno flavescente.

Di *T. umbrica* non si conosce la biologia; non potendosi distinguere a prima vista dalle altre specie del gruppo *arcuata-schaefferi*, è anche problematico indicare le piante frequentate dall'adulto; ai Prati di Tivo, peraltro, quasi tutti gli esemplari del gruppo in questione furono catturati su infiorescenze della stessa ombrellifera, probabilmente un *Chaerophyllum* o un *Anthriscus*.

Macrophya alboannulata Costa

In un precedente lavoro (PESARINI, 1982/83) accennai al problema della distribuzione italiana di *M. alboannulata*, descritta nel 1859 su un unico esemplare ♂ della Maiella e che, prima di venire riabilitata da CHEVIN (1975), fu per lungo tempo confusa con *M. albicincta* (Schränk) con cui è strettamente imparentata. Avendo ora esaminato abbondante materiale conservato sia in istituti che in collezioni private, mi è possibile fornire un primo quadro della distribuzione italiana di *M. alboannulata*, nonché i primi dati riferibili con certezza ad *albicincta*.

Macrophya alboannulata Costa

Piemonte: Ormea, Tavigliano; Lombardia: Turbigo, Abbiategrasso, Milano dint., Cassina Amata, Arcisate, Caslino al Piano, Cucciago, Asnago, Capriano, Alserio, L. di Annone loc. Cariolo, Annone, Rebuffone; Veneto: Colli Euganei; Emilia-Romagna: Carpi (BENZI & PICAGLIA, 1895), Bologna; Toscana: Firenze (BERLESE, 1890); Lazio: Roma loc. Sacca (LISTON, 1983); Abruzzo: Maiella (COSTA, 1859, loc. typ.); Basilicata (COSTA, 1894); Calabria: Camigliatello Silano; Sicilia: M. Etna (LISTON, l.c.).

Macrophya albicincta (Schränk)

Piemonte: S. Benedetto Belbo, Oropa, Ghislarengo; Lombardia: Gavirate, Turbigo, Cava Manara, Pavia, Cassina Amata, Caslino al Piano, Briosco, Calolziocorte loc. Gerola, Gerola Alta, Iseo, Brescia dint.; Friuli-Venezia Giulia: Duino; Liguria: Genova, M. Fasce, S. Lorenzo Casanova; Emilia-Romagna: Campora, Bondeno, Porporana, Foresta di Campigna loc. La Stretta; Toscana: Vallombrosa; Lazio: Roma; Abruzzo: Palena; Puglia: Foresta Umbra; Calabria: Camigliatello Silano; Sicilia: M. Etna (LISTON, l.c.); Jugoslavia, Slovenia: Postojna (Postumia).

Dall'analisi di tali dati si desume che in Italia *M. alboannulata* deve essere sensibilmente meno frequente di *albicincta*. Il materiale esaminato consiste infatti di 67 ♀♀ e 35 ♂♂ di quest'ultima specie contro 31 ♀♀ e 24 ♂♂ di *alboannulata*, con un rapporto di 1,85 : 1, cioè quasi esattamente l'inverso del valore registrato da CHEVIN (l.c., p. 259), 1 : 1,83, su un campione di 442 exx. Secondo LISTON (1983) *alboannulata* manca in Germania nord-occidentale, Scozia e Scandinavia e, per contro, rimpiazzerebbe completamente *albicincta* in Asia Minore. Apparentemente questi fatti paiono poco conciliabili con la relativa scarsità in Italia di *alboannulata*; in realtà viene soltanto smentita l'ipotesi di un gradiente Nord-Sud dell'abbondanza relativa di *alboannulata* che i dati precedenti potevano suggerire.

***Macrophya carinthiaca* (Klug)**

Di questa specie, dispersa su un areale che va dai Pirenei al Mar Nero, si conoscono solo pochi dati documentati. Il seguente è il primo reperto relativo al territorio italiano:

Alpignano, presso Torino, 29.V.1977, 1 ♂, lg. Pagliano.

Come per tutte le specie del gruppo *albicincta* (= gruppo *epinota* sensu GIBSON, 1980), anche per *carinthiaca*, la cui biologia è tuttora ignota, l'identificazione non è agevole; le chiavi più affidabili restano, nonostante la vetustà, quelle di ENSLIN (1912).

***Macrophya parvula* Konow**

Allo stesso gruppo delle precedenti appartiene pure *M. parvula*, una delle specie più raramente collezionate del genere. Secondo LISTON, che ne ha recentemente (1987) segnalato la presenza in Gran Bretagna, essa è presente pure in Francia, Germania, Cecoslovacchia, Romania e Bulgaria. Tra il materiale affidatomi in studio dall'amico Pagliano, ne ho individuato un esemplare ♀ proveniente dal Piemonte:

La Cassa, 374 m, 24.VI. / 15.VII.1980, lg. Scaramozzino.

Come riportato da LISTON (l.c.), l'esemplare britannico fu catturato su *Ligustrum*, e questo è l'unico dato biologico che possediamo di questa specie. Per una sua corretta identificazione si rimanda sempre a ENSLIN, 1912; ulteriori caratteri diagnostici sono forniti da LISTON (l.c.).

Macrophya superba Tischbein

Nel Museo di Storia Naturale di Venezia si conservano alcuni esemplari di *M. superba* provenienti dal Carso Triestino e dalla Carnia:

Sistiana, 13-21.VI.1972, 2 ♀♀; M. Hermada, 14.V.1963, 5 ♀♀ 3 ♂♂; ibid., 2-4.V. 1965, 1 ♀ 1 ♂; Piano d'Arta, 18-25.VI.1965, 1 ♀, lg. Levrini; P.so di M. Croce Carnico, 29.VI.1966, 1 ♀, lg. Giordani Soika.

Questi esemplari, a quanto mi risulta, rappresentano il primo dato relativo alla presenza in Italia di questa specie. Ritenuta entità a diffusione balcanico-anatolica, *M. superba* era stata peraltro segnalata da FAGGIOLI (1933) della Selva di Tarnova (oggi Trnovski Gozd, Slovenia, Iugoslavia)⁷.

M. superba, di cui non è nota la biologia, si riconosce agevolmente dall'affine *M. montana* (Scopoli) (= *rustica* auctt. nec L.) per avere pterostigma, tibie e tarsi III interamente giallo - rossicci anziché in gran parte neri; per una sua discriminazione a livello paleartico - occidentale, si rimanda alla chiave di BENSON, 1968. Serrulae e valva penis in SCOBIOLA - PALADE (1978, p. 207, Fig. 157).

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RIASSUNTO

Nel presente lavoro si affrontano svariati problemi di biogeografia e tassonomia relativi ai generi *Tenthredo* L. e *Macrophya* Dahlbom. In particolare si discute della variazione geografica di *Tenthredo atra* L., *T. bifasciata* Müller (sensu TAEGER) e *T. temula* Scopoli e si trattano entità ritenute rare e comunque poco note quali *Tenthredo diana* Benson (stat. nov.), di cui viene ridescritta la ♀, *T. albiventris picena* Pesarini (= *T. trivittata* p.) e *T. umbrica* Benson, o rivelatesi critiche come *T. frauenfeldii* Giraud.

Oltre alla segnalazione di sette entità nuove per la fauna italiana (*Tenthredo ignobilis* Klug, *T. rubricoxis* Enslin, *T. bifasciata violacea* (André), *T. pseudorossii* Taeger, nuova anche per la Turchia, *Macrophya carinthiaca* (Klug), *M. parvula* Konow e *M. superba* Tischbein), si fornisce un primo quadro della diffusione in Italia di *Tenthredo succincta* Lepeletier e *Macrophya alboannulata* Costa, di cui è stata recentemente ristabilita la validità.

ABSTRACT

Studies on Tenthredininae (Hymenoptera Tenthredinidae).

In the present work, several problems concerning biogeography and taxonomy in the genera *Tenthredo* L. and *Macrophya* Dahlbom are treated. Geographical variation in *Tenthredo atra* L., *T. bifasciata* Müller (sensu TAEGER) and *T. temula* Scopoli is especially investigated, and very seldom collected species like *T. diana* Benson (stat. nov.) (♀ re-described), *T. albiventris picena* Pesarini (= *T. trivittata* p.) and *T. umbrica* Benson, and other ones which prove to be critical, like *T. frauenfeldii* Giraud, are also dealt with.

Seven taxa new to Italy are recorded: *Tenthredo ignobilis* Klug, *T. rubricoxis* Enslin, *T. bifasciata violacea* (André), *T. pseudorossii* Taeger (one specimen from Turkey too, not previously recorded outside Europe), *Macrophya carinthiaca* (Klug), *M. parvula* Konow and *M. superba* Tischbein; and the distribution in Italy of *Tenthredo succincta* Lepeletier and *Macrophya alboannulata* Costa, recently stated as valid, is specified.

LIVIO TAMANINI

TABELLE PER LA DETERMINAZIONE DEI PIÙ COMUNI
ETEROTTERI ITALIANI (*)

(*Heteroptera*)

INTRODUZIONE

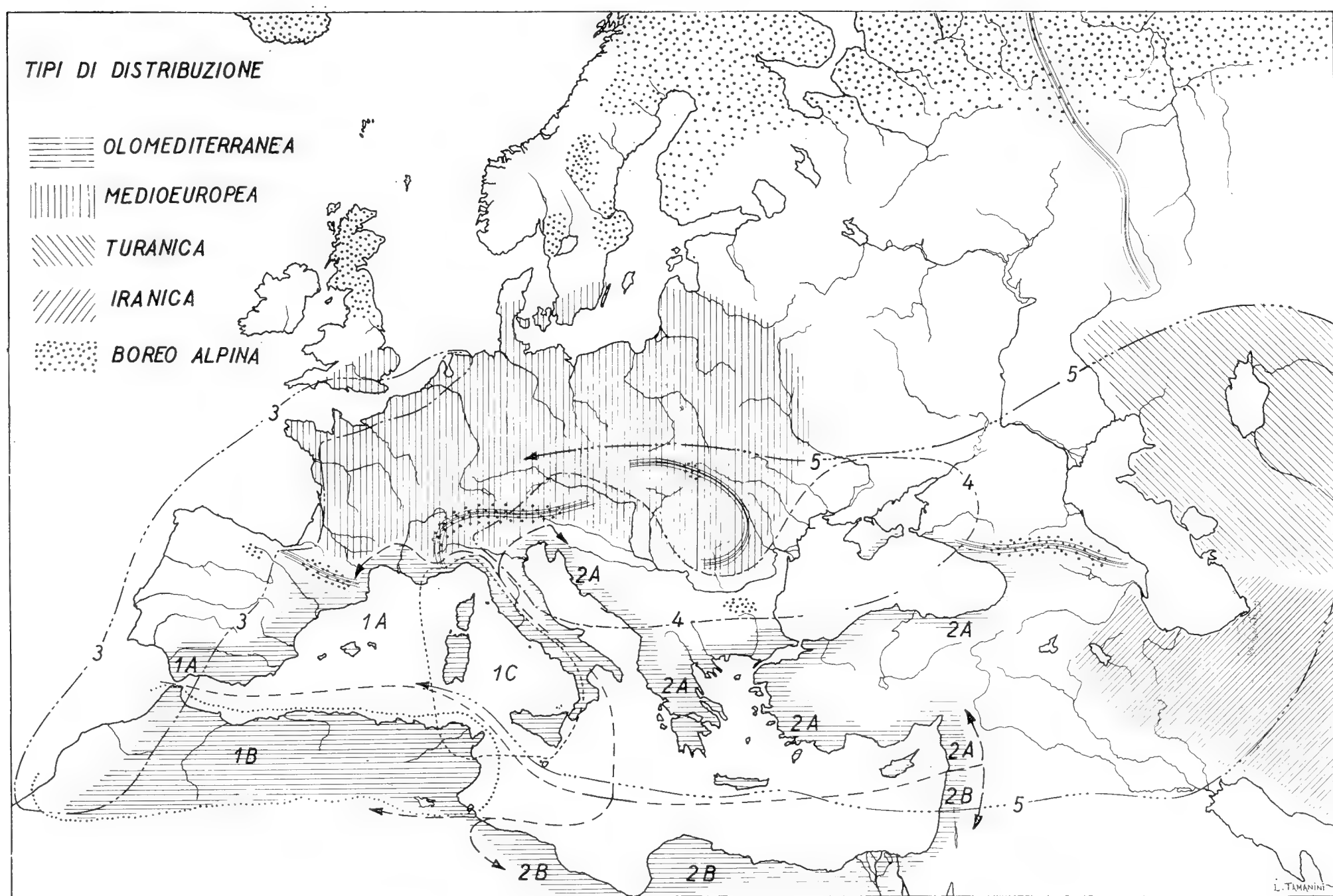
Gli Eterotteri rinvenibili in Italia hanno in genere dimensioni medie o piccole: la loro lunghezza va da 1 a 70 mm. Vivono negli ambienti più diversi, sulla terra e nell'acqua. Hanno livree ora vistose ora assai modeste o mimetizzate con l'ambiente. L'esoscheletro ha una consistenza molto varia, ma non raggiunge mai quella dei Coleotteri. L'apparato boccale è trasformato in un rostro; esso consta di un astuccio cilindrico (il labbro) suddiviso in 2 - 4 articoli nel cui interno passano gli stiletti perforatori e succhiatori (le mandibole e le mascelle trasformate). Lunghezza e robustezza del rostro variano a seconda che esso debba servire a succhiare la linfa delle piante o le uova o l'emolinfa di altri insetti.

Gli Eterotteri, per il loro adattamento agli ambienti più vari, comprendono gruppi molto diversi fra loro, sia dal punto di vista biologico che morfologico. Vi troviamo le forme idrodinamiche adatte al nuoto (Figg. 2 C D, 9 C D), i pattinatori che scivolano veloci sulle acque (Figg. 4 A C), i delicati miridi dei prati (Figg. 20 B, 22 A, 25 A B), i robusti cacciatori (Figg. 39 E F, 41 B), i cidnidi scavatori (Figg. 88, 89) e le cimici parassite dell'uomo e degli uccelli (Fig. 5 I). Vi sono specie esclusivamente fitofaghe o zoofaghe, altre adattate a tutte e due le nutrizioni. Numerose sono parassite di essenze determinate; poche sono legate agli animali a sangue caldo. Per quanto finora noto, il 16% delle nostre specie è zoofago, il 18% fitofago ed il 66% zoofago e fitofago.

I giovani, appena escono dall'uovo, assomigliano già agli adulti (Insetti eterometaboli). I primi tre stadi giovanili (neanidi) sono privi di abbozzi alari, mentre i due ultimi (ninfe) presentano due distinte pteroteche. Nelle specie attere anche i due ultimi stadi non hanno un astuccio alare. Sulla biologia degli Eterotteri molte sono tuttora le lacune, soprattutto sugli stadi preimmaginali.

Sebbene si conoscano Eterotteri acquatici e terrestri già dal Triassico, sappiamo ben poco sulla loro origine.

(*) *Nota della Redazione.* Il presente lavoro venne steso, diversi anni fa, per la *Piccola Fauna Italiana* dell'Editore Martello, iniziativa che purtroppo, per cause varie, si limitò alla pubblicazione dei due volumi sui Vertebrati (1968 e 1969). La Società Entomologica Italiana è lieta di poterlo ora offrire ai suoi Soci, soprattutto ai giovani, con gli aggiornamenti, come un utile testo di orientamento per iniziare lo studio degli Eterotteri, importantissimo e vasto gruppo di Insetti, purtroppo attualmente molto trascurato in Italia.



TAV. I. - Tipi di distribuzione riportati nella cartina e nel testo:

Olomediterranea, Medioeuropea, Turanica, Iranica, Boreoalpina, Nordmediterranea (1 A + 1 C + 2 A), Sudmediterranea (1 B + 2 B), Mediterranea occidentale (1 A + 1 B + 1 C), Mediterranea orientale (2 A + 2 B), Tirrenica (1 C, la zona entro la linea a trattini), Maghrebina (1 B, la zona entro la linea a punti).

I vari tipi principali si possono fondere, dando, ad esempio, le distribuzioni: Mediterraneo-atlantica (quest'ultima entro la linea 3), Adriatico-pontica (entro la linea 4), Euroturantica (entro la linea 5). Nel testo si cita anche la distribuzione Macaronesica (Azzorre, Canarie e Madera), Palearctica (Europa, Africa sett., Asia sett. e centr.), Oloartica (Palearctica + America sett.) e Neartica (America centr. e merid.).

Lo STICHEL (1955), nella sua classica monografia, divideva gli Eterotteri in quattro grandi gruppi:

1. Hydrocoriomorpha (= Hydrocorisae): svolgono tutto il loro ciclo vitale nell'acqua (vi appartengono le prime sei famiglie della tabella che segue). Gli adulti, pur essendo in generale buoni volatori, lasciano il loro elemento solo quando vi sono costretti.

2. Amphibicoriomorpha (= Amphibicorisae): corrono sull'acqua o vivono nelle sue immediate vicinanze. Sono dei veloci cacciatori. Diverse specie hanno contemporaneamente esemplari alati ed atteri e forme intermedie. Vi appartengono le famiglie VII - XIII.

3. Cimicomorpha: sono legati agli ambienti terrestri più diversi. Hanno le regioni inferiori prive di peli tattili e le ali con la vena radiale fusa parzialmente con la vena media. Comprendono le famiglie XIV - XXII.

4. Pentatomorpha: vivono in biotopi terrestri come i Cimicomorpha, hanno le regioni ventrali provviste di peli tattili e le ali con la vena radiale e media divise. Comprendono le famiglie XXIII - XXXVII. Alcuni autori riuniscono questi due ultimi gruppi nella superfamiglia Geocorisae.

Altri autori più recenti propongono inquadramenti generali un poco più complicati.

La nomenclatura delle parti principali, usate per la determinazione delle specie, è schematizzata nella Fig. 1.

Le grandi linee della distribuzione geografica sono schematizzate nella Tavola I, tratta, con qualche modifica, dai classici lavori di LA GRECA (1964).

Tutti gli Eterotteri italiani sono stati elencati nel Catalogo di SERVADEI (1967), che tratta circa 395 generi e 1376 specie. Attualmente il numero totale delle specie note per l'Italia è aumentato di poco: ritengo che siano quasi 1400.

Nella trattazione che segue, saranno esaminate tutte le famiglie note per la fauna italiana. Al riguardo dei generi e delle specie, ci siamo limitati a trattare solo quelli più comuni o importanti, circa due terzi per i primi e quasi un terzo per le seconde.

A seguito del nome di ogni famiglia e genere è riportato, in via orientativa, il numero delle entità riscontrate nella fauna italiana. Il riferimento al numero delle specie include, per semplificazione, anche quello delle sottospecie o razze geografiche.

TABELLA DELLE FAMIGLIE DEGLI HETEROPTERA

1.	Antenne più brevi del capo o uguali alla sua larghezza massima (Fig. 2 A)	2
—	Antenne molto più lunghe della larghezza massima del capo (Figg. 1 A, 2 G, 4 A, 4 C, 5 H - I)	8
2.	Capo con ocelli. Vivono nella sabbia prossima all'acqua (Fig. 3 D)	I. <i>Ochteridae</i>
—	Capo senza ocelli. Vita completamente acquatica	3
3.	Tarsi anteriori di un solo articolo molto modificato (Figg. 2 A, 10 A - I)	VI. <i>Corixidae</i>
—	Tarsi ant. di uno o più articoli non modificati come sopra; ogni articolo è più breve della tibia (Figg. 2 B - E)	4
4.	Lunghezza del corpo mm 2,5 - 3; emielitre senza membrana (Fig. 2 E)	IV. <i>Pleidae</i>
—	Dimensioni maggiori. Emielitre, quando presenti, con membrana (Figg. 2 B - D)	5
5.	Corpo a forma di fuso. Tibie e tarsi ant. non ripiegabili contro i femori (Fig. 2 C)	V. <i>Notonectidae</i>
—	Corpo piatto. Tibie e tarsi ant. ripiegabili contro i femori in un alloggiamento più o meno differenziato (Figg. 2 B, 2 D)	6
6.	Addome sprovvisto di tubo respiratorio. Corpo ovale (Figg. 2 D, 8 E)	III. <i>Naucoridae</i>
—	Addome con tubo respiratorio (Fig. 2 B)	II. <i>Nepidae</i>
8.	Antenne di 4 articoli (Figg. 2 G, 4 A, 4 C, 5 H - I)	9
—	Antenne di 5 articoli (Fig. 1 A)	34
9.	Capo circa 2 volte più lungo del pronoto e pressoché cilindrico (Fig. 3 E)	XI. <i>Hydrometridae</i>
—	Capo più breve e di forma diversa (Figg. 4 A, 4 C, 5 H - I)	10
10.	Superficie inferiore del corpo coperta di fine e densa peluria vellutata, bianco-argentea o giallo-lucente. Corrono sulla superficie dell'acqua	11
—	Superficie inferiore del corpo con peluria diversa. Biologia pure diversa	13

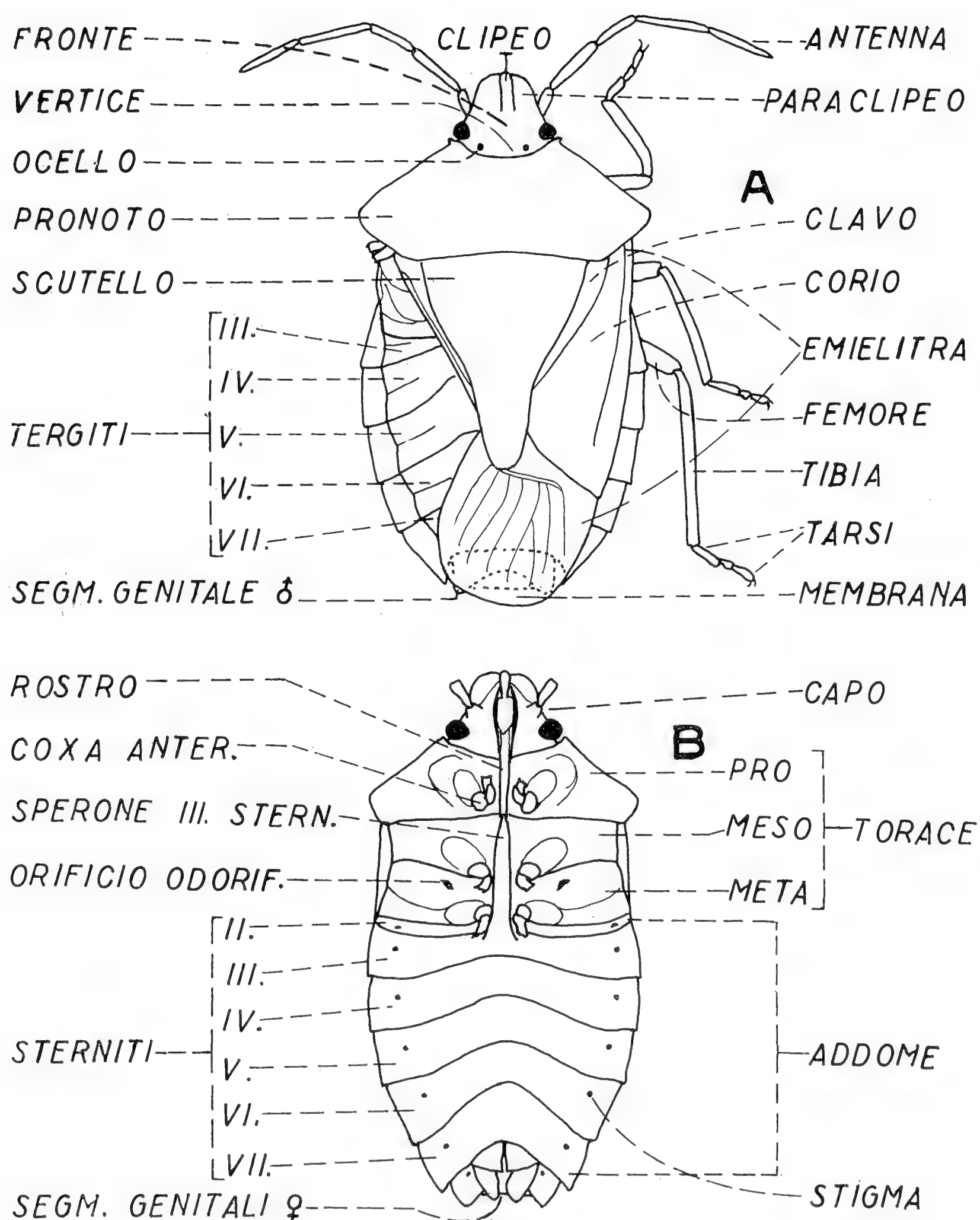


Fig. 1: Nomenclatura principale.

11. Unghie inserite all'estremità dell'ultimo articolo dei tarsi (Fig. 4 B). Coxe ravvicinate come in Fig. 3 B X. Mesoveliidae
- Unghie inserite prima dell'estremità, in un incavo laterale interno dell'ultimo art. dei tarsi (Fig. 2 F). Coxe fra loro distanziate come in Figg. 3 A, 3 C 12
12. Zampe medie e posteriori robuste, di poco più lunghe delle ant. (Fig. 2 G). Femori del maschio ingrossati. Posizione delle coxe come in Fig. 3 A XII. Veliidae
- Zampe medie e post. filiformi, molto più lunghe delle ant. (Fig. 4 C). Femori post. uguali nei due sessi. Posizione delle coxe come in Fig. 3 C XIII. Gerridae
13. Rostro curvato sotto il corpo, ma non appoggiato contro il capo o corrente in un canale (Figg. 4 E, 4 H, 39 G, 40 F) 14

- Rostro appoggiato alla faccia inferiore del capo e spesso adagiato in un canale formato dalle due buccule (Figg. 4 D, 7 A) 17
- 14. Ocelli posti fra gli occhi, nel mezzo della fronte (Fig. 10 L) 15
- Ocelli posti nella parte posteriore del capo o all'altezza del margine posteriore degli occhi (Figg. 4 F, 4 G) 16
- 15. Femori e tibie anteriori con una doppia fila di spine. Lunghezza mm 3,5 - 5 (Fig. 11 B) VII. *Leptopodidae*
- Femori e tibie ant. completamente privi di spine. Lunghezza mm 2,5 - 8 (Fig. 11 C) VIII. *Saldidae*
- 16. Parte posteriore del capo sullo stesso piano della anteriore e non divisa da solchi trasversi; ocelli e rostro come in Figg. 4 G - H XX. *Nabidae*
- Parte posteriore del capo divisa dall'anteriore da un profondo solco posto fra occhi e ocelli (Figg. 4 E, F, 40 C, F) XXI. *Reduviidae*
- 17. Pronoto ed emielitre coperte da un reticolo poligonale (Figg. 42 D, G, 43 G) 18
- Pronoto ed emielitre con altra scultura o lisci 19
- 18. Pronoto pentagonale proteso posteriormente in modo da coprire completamente lo scutello (Figg. 5 B, 42 C) XXIII. *Tingidae*
- Pronoto quadrangolare, scutello visibile (Figg. 5 C, 45 G) XXVI. *Piesmidae*
- 19. Tarsi di due articoli 20
- Tarsi di tre articoli 21
- 20. Lunghezza inferiore a mm 2,5. Maschi alati con ocelli. Femmine brachittere prive di ocelli (Figg. 5 F ♂, 5 G ♀) XVII. *Microphysidae*
- Più lunghi di mm 3,5, molto appiattiti, privi di ocelli ed uguali nei due sessi (Figg. 5 H, 44 F - H) XXIV. *Aradidae*
- 21. Primo e secondo art. antennale brevi ed ingrossati, terzo e quarto lunghi, molto sottili e con lunghi peli semieretti (Fig. 5 A). Lungh. mm 1 - 2,8 XIV. *Dipsocoridae*
- Antenne con altri caratteri 22
- 22. Capo privo di ocelli 23
- Capo con ocelli 25
- 23. Corpo molto appiattito, ovoidale, attero. Parassiti di uccelli e mammiferi (Fig. 5 I) XIX. *Cimicidae*
- Corpo con altri caratteri 24
- 24. Articoli delle antenne di uguale robustezza; 2° art. al massimo 1,5 volte più lungo del 1° (Fig. 5 D). Tergiti 5° e 6° come nelle Figg. 6 A, 45 H XXVII. *Pyrrhocoridae*
- Articoli delle antenne gradatamente assottigliati; 2° art. almeno 2 volte più lungo del 1° (Fig. 5 E). Tergiti addominali con i margini anteriore e posteriore dritti XVI. *Miridae*
- 25. Emielitre con embolio e cuneo (Fig. 6 G). Lungh. mm 1 - 5 26
- Emielitre prive di embolio e cuneo (Figg. 6 D, 6 E). Lungh. superiore a mm 5 27
- 26. Rostro di 3 art. Capo con la fronte verticale (Fig. 6 H). Lungh. mm 2,5 - 4 XV. *Isometopidae*
- Rostro di 4 art. Capo con la fronte pressoché orizzontale. Lungh. mm 1 - 5 (Figg. 7 A, 37 F) XVIII. *Anthocoridae*
- 27. Rostro di 3 art. Corpo ovale, nero con macchie bianche (Fig. 7 B) o con l'emielitre tutte chiare (Fig. 11 C) VIII. *Saldidae*
- Rostro di 4 art. Forma del corpo e colore diversi 28
- 28. Zampe anteriori atte ad afferrare la preda (Fig. 6 F, 41 G) XXII. *Phymatidae*
- Zampe anteriori normali 29
- 29. Membrana delle emielitre con più di 5 venature. Tergite 5° con il margine ant. e post. diritto (Figg. 6 C, 6 D) 30
- Membrana delle emielitre con 6 o più venature, spesso ramificate (Fig. 6 E). Tergiti 5° e 6° del tipo rappresentato nella Fig. 6 B 31
- 30. Antenne filiformi, lunghe quanto il corpo, con il 1° articolo lungo circa quanto i due seguenti. Corpo lungo e stretto (Figg. 7 C, D) XXV. *Berytidae*
- Antenne non filiformi, molto più brevi del corpo, con il 1° articolo nettamente più breve dei due seguenti uniti XXVIII. *Lygaeidae*
- 31. Antenne (Fig. 7 E), tibie e femori con anelli bianco-gialli e nericci XXIX. *Stenocephalidae*
- Antenne, tibie e femori senza distinti anelli chiari e oscuri 32
- 32. Capo largo quanto il pronoto o quasi e ristretto posteriormente. Ultimo articolo delle antenne lungo e piegato un poco ad arco (Fig. 7 G) XXXI. *Alydidae*
- Capo molto più stretto del pronoto; ultimo articolo delle antenne breve e diritto (Fig. 7 F) 33

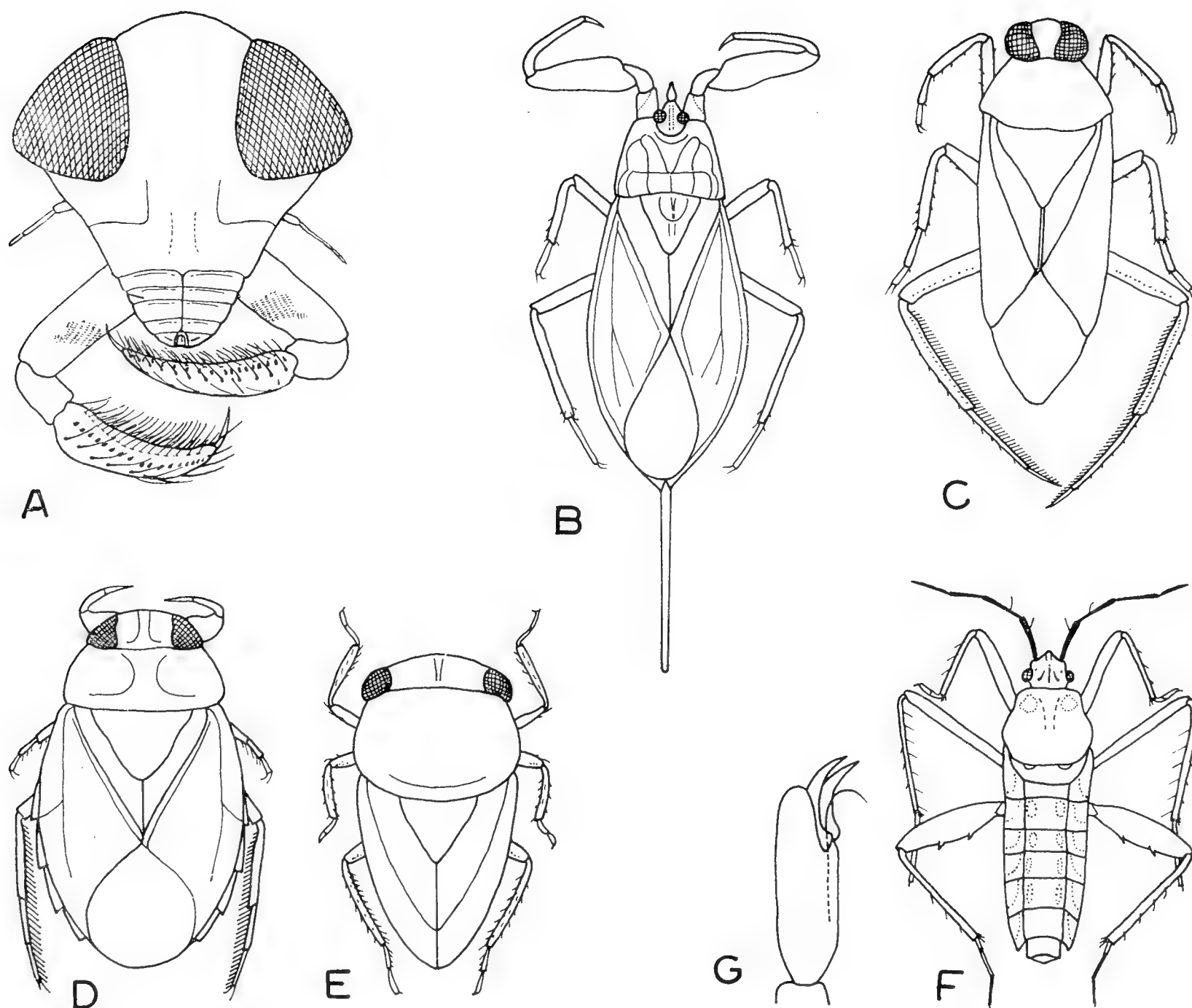


Fig. 2: A, *Corixa*; B, *Nepa*; C, *Notonecta*; D, *Naucoris*; E, *Plea*; F, *Velia currens*, ♂ attero; G, id., tarso.

33. Orificio odorifero visibile ai lati del metasterno, in prossimità delle subcoxe medie e posteriori (Fig. 7 L) XXX. Coreidae
 — Orificio odorifero del metasterno invisibile (Fig. 7 I) XXXII. Rhopalidae
 34. Lunghezza del corpo circa 2 mm. Regioni inferiori del corpo coperte di fine e breve peluria argentea (Fig. 7 H) IX. Hebridae
 — Dimensioni maggiori e peluria ventrale diversa 35
 35. Tarsi con tre articoli (Figg. 8 A, B) 36
 — Tarsi con due articoli (Fig. 8 C) 38
 36. Tibie prive di spine o speroni (Fig. 8 A); se delle deboli spine sono presenti, lo scutello è ovale e ricopre gran parte dell'addome 37
 — Tibie provviste di robuste spine o denti (Figg. 8 B, 89 A). Scutello triangolare e ricoprente non più di un terzo dell'addome (solo il gen. *Thyreocoris* ha spine alle tibie e scutello grande) XXXVI. Cydnidae
 37. Scutello grande quanto l'addome (Figg. 83 F, 84 A, B). Larghezza del pronoto fra gli angoli posteriori minore della larghezza basale dello scutello. Margine anteriore del prosterno con una dilatazione semiovale che copre la base delle antenne (Fig. 83 D) XXXV. Scutelleridae
 — Scutello triangolare molto più stretto dell'addome (Figg. 71 C, D, E) (solo nei *Podopinae* è lungo quanto l'addome (Figg. 82 A, D). Larghezza del pronoto fra gli angoli posteriori uguale a quella dello scutello (Figg. 82 A, D). Margine anteriore del prosterno diritto o solo sinuoso (Fig. 83 C) XXXIV. Pentatomidae
 38. Scutello triangolare ed esteso su circa un quarto dell'addome (Fig. 8 D) XXXIII. Acanthosomidae
 — Scutello ovoidale, ricoprente tutta la regione addominale (Fig. 89 B) XXXVII. Plataspidae

Famiglia I. **Ochteridae** (Ochteridi; 1 genere, 1 specie)

Corpo ovale, depresso, nero con macchie chiare (somiglia alle Salde); capo breve con la regione frontale declive; rostro e antenne di 4 articoli (Fig. 3 D). Lunghezza mm 4 - 4,7

Ochterus marginatus (Latr.)

Distribuzione mediterraneo-indiana ed in parte etiopica; Italia appenninica e insulare ai margini degli specchi d'acqua dolce, leggermente corrente. Sembra che cacci preferibilmente larve di insetti che vivono nelle sabbie e nel fango al margine dell'acqua. Le larve si infossano spesso nel limo. Gli adulti corrono così rapidamente che la loro cattura è difficile.

Famiglia II. **Nepidae** (Nepidi; 2 generi, 3 specie con 4 razze)

Vivono al margine degli stagni e delle acque a corso lento e ricche di vegetazione. Attendono all'agguato la preda (insetti, piccoli crostacei, avanotti), ma succhiano anche uova di pesci. Le uova dei Nepidi, introdotte in vegetali marcescenti, sono fornite di 2 - 8 filamenti respiratori che sporgono dall'acqua.

1. Corpo piatto, ovale, castaneo, più breve di 22 mm (Fig. 2 B) *Nepa* (vedi dopo)
- Corpo cilindrico, paglierino, più lungo di 30 mm (Fig. 89 E) *Ranatra* F. (1 specie)
- Lungh. mm 30 - 35, con il sifone caudale fino a 60 - 70 mm (è il più lungo Eterottero italiano) *R. linearis* (L.)
- Paleartica; tutta Italia e isole.

Genere *Nepa* L. (2 specie e 3 razze)

1. Forma delle antenne come in Fig. 8 G; lungh. del corpo (senza sifone) mm 16 - 21 *N. cinerea cinerea* L.
- Paleartica; Alpi e Appennini.
- Forma delle antenne come in Fig. 8 H; lungh. del corpo mm 14 - 17 *N. cinerea seurati* Berg.
- Forma delle antenne come in Fig. 8 F; lungh. del corpo mm 14 - 20 *N. sardiniensis* Hung.
- Endemismo sardo-corso; Sardegna.

Famiglia III. **Naucoridae** (Naucoridi; 2 generi, 4 specie)

1. Rostro proteso fino alle coxe anteriori. Femori anteriori molto ingrossati e tibie curve (Fig. 8 I). Superficie dorsale verdastria lucente *Naucoris* F.
- Rostro proteso fino alle coxe intermedie. Femori poco ingrossati e tibie diritte. Colore dominante bruno nerastro *Apheilocheirus* Westw. (1 specie)
- Rara nella forma macrottera, più frequente in quella brachittera, che ha le emielitre ridotte ad una piccola squama. Lungh. mm 8 - 10 (Fig. 8 E) *A. aestivalis* (F.)
- Europeo - anatolica; in Italia nei fiumi Brenta (Trentino), Ticino (Lombardia) e Mignone (Lazio).

Genere *Naucoris* Fabr. (3 specie)

Tra la vegetazione acquatica di laghi, stagni e acque a corso lento. Succhiano le alghe e diversi artropodi acquatici.

1. Pronoto con il margine laterale liscio e leggermente ingrossato (Fig. 2 D). Lungh. mm 11 - 16 *N. cemicoides* (L.)
- Eurosibirica; comune in tutta Italia.
- Pronoto con il margine laterale leggermente rugoso. Lungh. mm 9 - 10 *N. maculatus* F.
- Mediterraneo - occidentale; comune nell'Italia appenninica e isole.

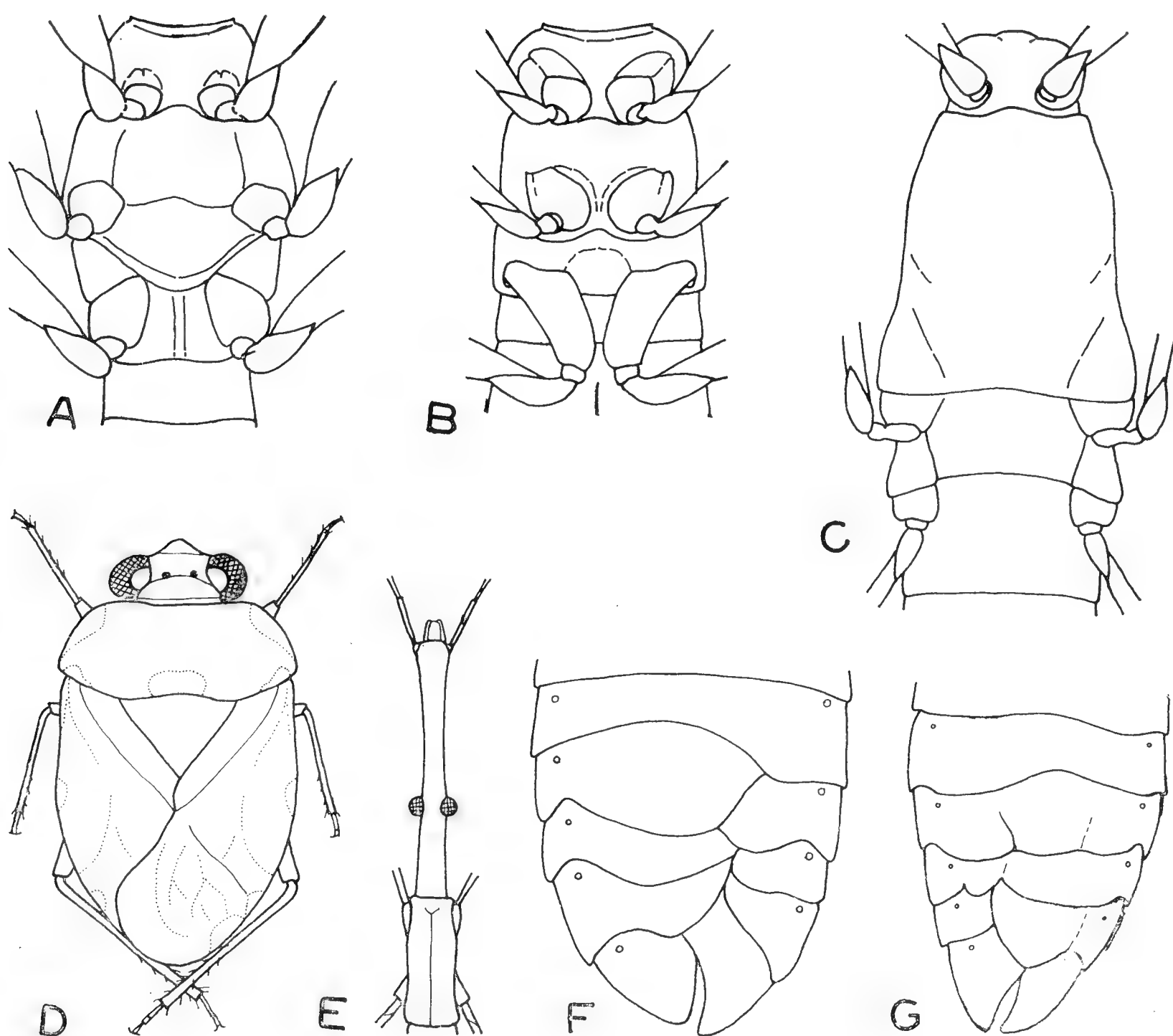


Fig. 3: A, *Velia*, posizione delle coxe; B, *Mesovelina*, id.; C, *Gerris*, id.; D, *Ochterus*; E *Hydrometra*; F, *Corixa*; G, *Arctocorisa*.

Famiglia IV. **Pleidae** (Pleidi, 1 genere, 1 specie)

Bianco paglierina, con le regioni superiori densamente e uniformemente punteggiate; parti inferiori nerastre (Fig. 2 E). Lunghezza mm 2,5 - 3 *Plea minutissima* Leach
Euro-sibirico - olomediterranea; tutta Italia, nelle acque tranquille, ricche di alghe.

Famiglia V. **Notonectidae** (Notonettidi; Notonette; 2 generi, 5 specie)

In tutte le acque dolci ferme e a corso lento. Si nutrono di larve di insetti acquatici, piccoli crostacei, girini e avanotti. Le *Notonecta*, sia in riposo che in agguato, si tengono in prossimità della superficie, mentre le *Anisops* restano più in profondità. Pungono l'incauto che le serra nel pugno, causando acuto dolore.

Corpo più slanciato ed esile che nelle vere Notonette; fronte prominente nel maschio e arrotondata nella femmina *Notonecta* Leach (v. dopo)
— Dorso bianco. Lunghezza mm 7 - 8,5 *Anisops* Spin. (1 specie)
— Corpo più slanciato ed esile che nelle vere Notonette; fronte prominente nel maschio e arrotondata nella femmina *A. sardea* H.S.
Mediterraneo - afroindiana; nelle acque del piano nell'Italia appenninica e isole.

Genere *Notonecta* Leach (4 specie)

1. Angolo anteriore del pronoto acuto e prominente sugli occhi (Fig. 8 L). Emielitre gialle con macchie nere. Lunghezza mm 13 - 14 *N. viridis* Delc.
Sudeuropeo - atlantico - mediterranea; comune in tutta Italia.
- Angolo anteriore del pronoto ottuso come in Fig. 8 M, o ancora più arrotondato 2
2. Metanoto e dorso dell'addome gialli. Emielitre giallastre cosparse di piccole macchie nerice. Lungh. mm 13 - 15 *N. maculata* F.
Olomediterraneo - europea; comune in tutta Italia nelle sorgenti e nelle acque a lento corso.
- Metanoto e dorso dell'addome neri. Emielitre giallastre cosparse di macchie nere in modo assai vario (Fig. 9 A), fino a diventare nere vellutate con due bande chiare, di lunghezza variabile (Fig. 9 B). Lungh. mm 15 - 17 *N. glauca* L.
Palearctica; comune in tutta Italia.

Famiglia VI. **Corixidae** (Corisidi; 8 generi, 35 specie)

In tutte le acque stagnanti o a corso lento dal piano fino a 2500 m s.l.m. Eminentemente fitofagi si nutrono di alghe filamentose dilacerate da speciali organi boccali, della microfauna bentica che ricopre il limo del fondo, di animaletti morti e, qualcuna delle specie maggiori, anche di larve di insetti acquatici. I maschi hanno l'ultimo articolo dei tarsi conformato in modo particolare (Figg. 10 A - I) e gli ultimi sterniti addominali asimmetrici (Figg. 3 F, 3 G). Nella determinazione è spesso necessario ricorrere all'esame di tali parti, e talvolta anche del fallo e dei parameri (Fig. 89 D), data la grande uniformità di forma e colore di molte specie.

1. Antenna di 3 articoli, scutello visibile (Fig. 9 C) *Micronecta* Kirk. (5 specie)
Margini anteriori e posteriori del pronoto congiunti ai lati in un angolo acuto (Fig. 9 C). Regioni superiori giallo brunicce con poche macchie indistinte più oscure. Lunghezza mm 2,0 - 2,3 *M. meridionalis* (Costa)
Euro - maghrebina; tutta Italia nelle acque poco profonde.
- Antenna di 4 art., scutello nascosto dal pronoto (Fig. 9 D) 2
2. Rostro completamente liscio. Pronoto unicolore *Cymatia* Flor (2 specie)
Pronoto cosperso di minute macchioline trasverse gialle. Lunghezza forma macrott. mm 7,0 - 7,5, forma brach. mm 5,6 - 6,6. Pala Fig. 9 M *C. rogenhoferi* (Fieb.)
Eurosibirica - turanica; Italia, Isola Pantelleria, rara.
- Rostro nella parte distale con striole trasverse. Pronoto con linee trasverse nere e chiare (Fig. 9 D) 3
3. Pronoto ed emielitre lisce. Maschio con l'asimmetria degli sterniti a sinistra (Fig. 3 F, addome rivoltato) *Corixa* Geoff. (vedi dopo)
- Pronoto e talvolta anche l'emielitre con finissime striole longitudinali. Maschio con l'assimmetria degli sterniti a destra (Fig. 3 G) 4
4. Lobi laterali del protorace (Fig. 9 E) di forma trapezoidale (Figg. 9 H, I) 5
- Lobi laterali del protorace di forma diversa (Figg. 9 F, G, L) 6
5. Porzione distale della pala gialla in ambedue i sessi. Tibie anteriori del maschio, nella parte distale con un fascio di robusti peli (Fig. 10 A) *Hesperocorixa* Kirk. (vedi dopo)
- Porzione distale della pala del maschio nera. Tibie anteriori del maschio semplici (Fig. 10 B) *Parasigara* Poiss. (2 specie)
Pronoto con 7 linee trasverse gialle. Lungh. mm 7,5 - 8. Pala del maschio Fig. 10 D; lobo laterale del pronoto Fig. 9 I *P. transversa* (Fieb.)
Sudeuropeo - maghrebina; Italia settentrionale, Sicilia e Sardegna.
6. Porzione mediana distale del pronoto priva di carena o questa è appena individuabile *Sigara* F. (vedi dopo)
- Parte anteriore del pronoto con una distinta carena che può giungere fino a metà del disco. *Arctocorisa* Wall (1 specie)
Pronoto con 10 - 12 linee trasverse gialle. Lungh. mm 7 - 9,5. Pala del maschio Fig. 10 C; lobo laterale pronoto Fig. 9 L (Fig. 89 D, fallo e parameri) *A. carinata* (C. Sahlb.)
Euro - boreo alpina; Italia settentrionale, sopra i 1000 m s.l.m.

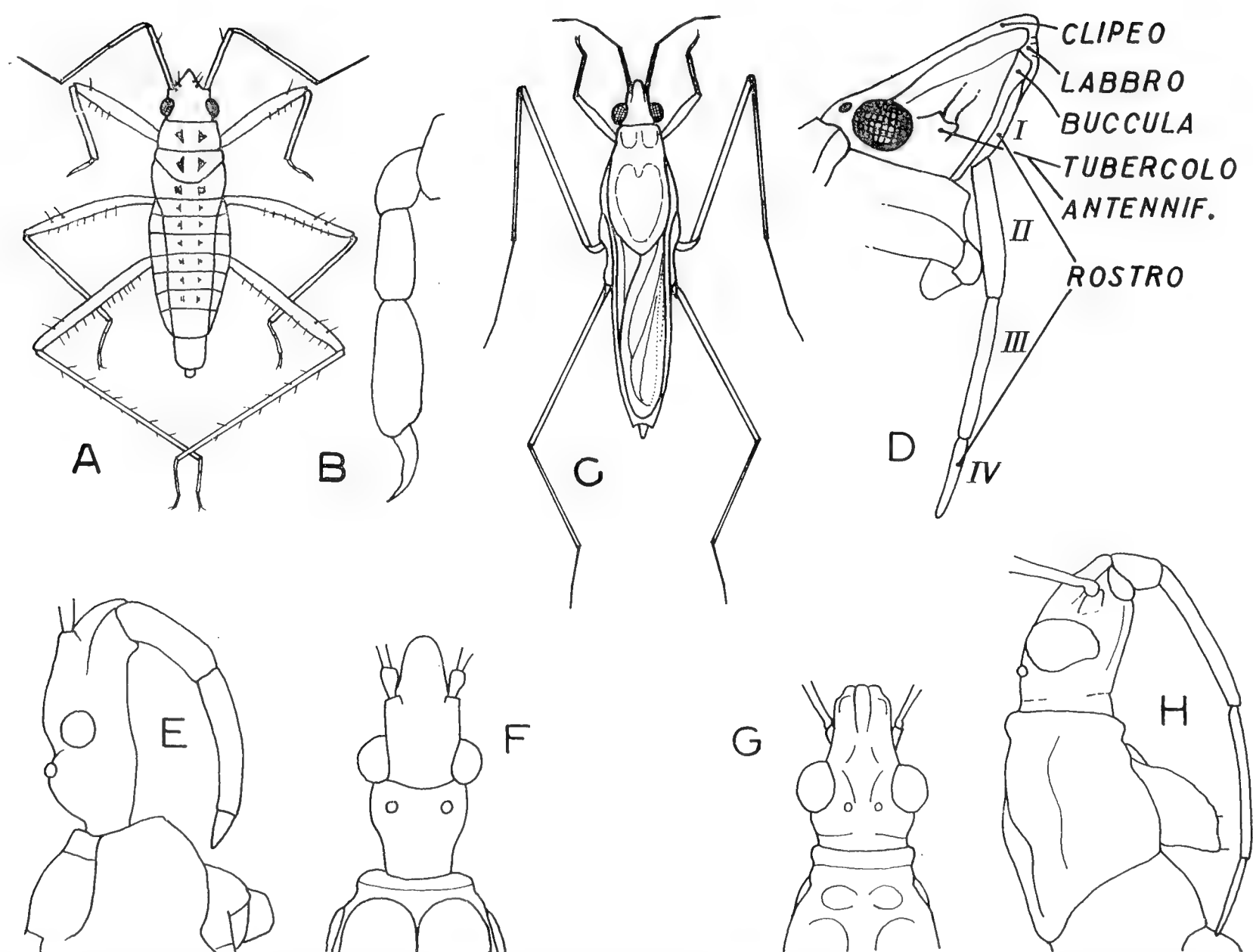


Fig. 4: A, *Mesovelgia furcata*; B, id., tarsi posteriori; C, *Gerris costae*; D, Pentatomidae; E, F, *Rhinocoris iracundus*; G, H, *Himacerus mirmecoides*.

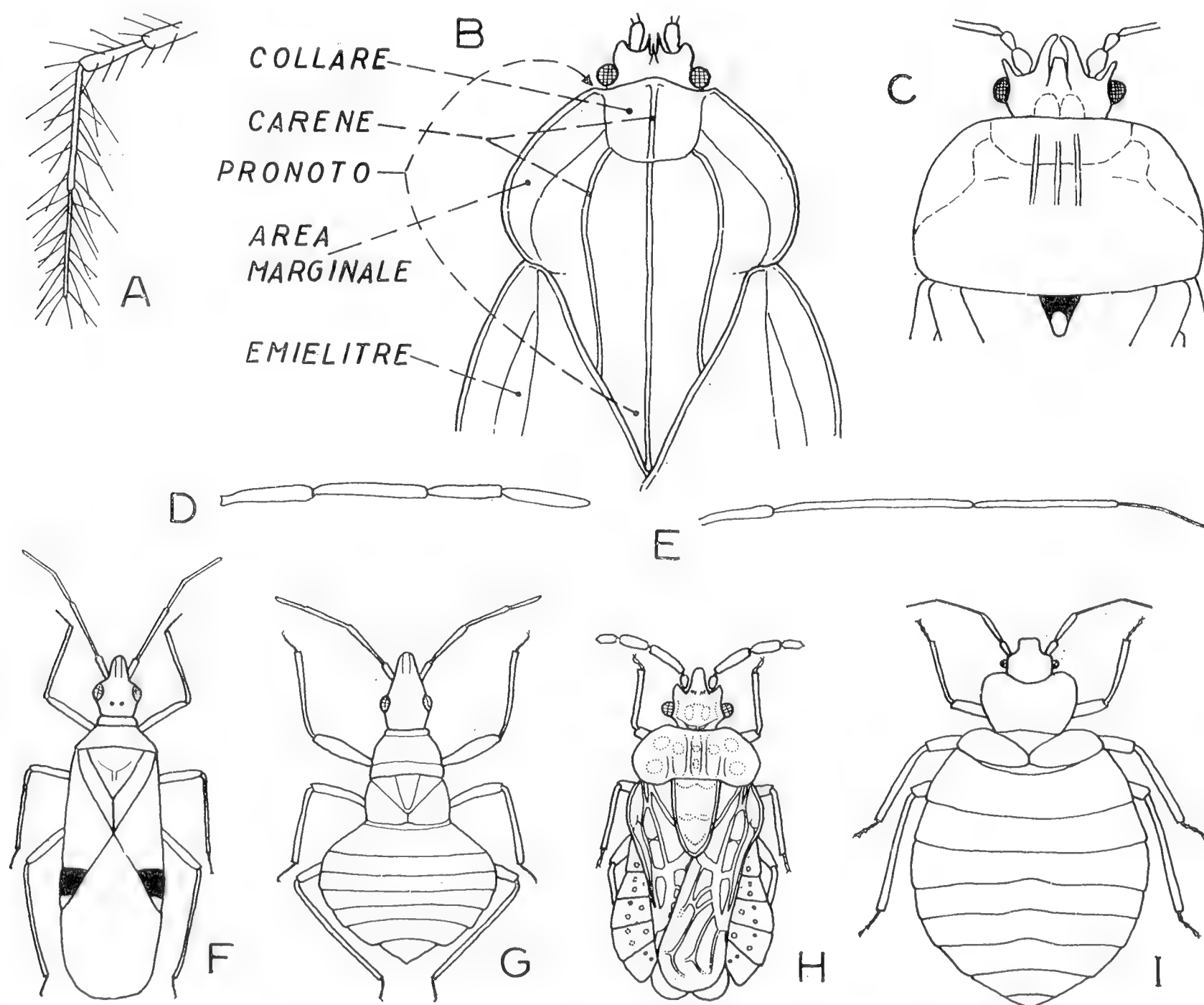


Fig. 5: A, *Ceratomus coleoptratus*, antenna; B, *Tingis cardui*; C, *Piesma quadrata*; D, *Pyrrhocoris apterus*; E, *Adelphocoris seticornis*, antenna; F, *Loricula elegantula*, ♂; G, id., ♀; H, *Aradus*; I, *Cimex lectularius*.

Genere *Corixa* Geoffroy (6 specie)

1. Unghie delle zampe intermedie lunghe quanto i tarsi o poco più. Lung. mm 8-9.
Pala del maschio Fig. 9 O *C. affinis* (Leach)
Medioeuropea sudmediterraneo-macaronesica anatolico-indiana; tutta Italia nei canali e acquitrini.
- Unghie delle zampe intermedie nettamente più brevi dei tarsi. Porzione prossimale delle tibie senza incavi. Lung. mm 13. Pala Fig. 9 N *C. punctata* (Illiger)
Europeo-maghrebino-turanico-indiana; tutta Italia.

Genere *Hesperocorixa* Kirk. (5 specie)

1. Pronoto con 6 linee trasverse gialle. Disegni gialli delle emielitre regolari e più stretti dei neri. Lung. mm 7-8. Pala Fig. 10 A; lobo laterale del pronoto Fig. 9 H *H. linnei* (Fieb.)
Eurosibirico-maghrebina; in Italia qua e là nelle acque correnti.
- Pronoto con 10-11 linee trasverse gialle. Disegni gialli delle emielitre meno regolari. Lung. mm 9. Pala del maschio meno dilatata che nella precedente *H. parallela* (Fieb.)
Euro-mediterraneo-orientale; Italia settentrionale, frequente.

Genere *Sigara* Fabr. (18 specie)

1. Femori posteriori, sulla superficie dorsale, con una fila di 6-12 spine 2
- Femori posteriori sulla superficie dorsale con 2-5 spine disposte irregolarmente 3
2. Lunghezza del corpo mm 7-8. Pronoto con 7 linee trasverse gialle. Pala del maschio Fig. 10; lobo laterale del pronoto Fig. 9 F *S. italica* (Jacz.)
Alpina orientale; Italia settentrionale, nelle acque a corso lento.
- Lunghezza mm 6,26-6,75. Pronoto con 6 linee trasverse gialle. Pala Fig. 10 E; lobo laterale Fig. 9 G *S. fossarum* (Leach)
Eurosibirica; tutta Italia, comune.
3. Parte distale del primo articolo dei tarsi ed ultimo neri. Pronoto con 8-9 linee trasverse a zig-zag. Pala Fig. 10 F. Lung. mm 5-6 *S. lateralis* (Leach)
Paleartico-afroindiana; tutta Italia, comune negli stagni.
- Tarsi posteriori non anneriti 4
4. Pronoto con 6 linee trasverse gialle. Lung. mm 8. Pala del maschio Fig. 10 G *S. striata* (L.)
Eurosibirico-anatolica; Italia centro-settentrionale.
- Pronoto con 7-10 linee gialle trasverse. Lunghezza mm 4-7 5
5. Pala del maschio Fig. 10 H. Linee gialle prossimali del clavo, verso l'interno, più larghe. Lung. mm 6,5 (Figg. 9 D, E) *S. limitata* (Fieb.)
Eurosibirico-anatolica; Italia settentrionale e centrale.
- Pala del maschio Fig. 10 I. Clavo con le linee gialle non allargate. Lung. mm 5,5-6,5 *S. nigrolineata* (Fieb.)
Eurosibirico-anatolica; comune in tutta Italia.

Famiglia VII. **Leptopodidae** (Leptopodidi, 2 generi, 3 specie)

1. Secondo articolo delle antenne lungo circa 4 volte il primo *Leptopus* Latr. (2 specie)
Spine degli occhi molto più brevi ed esili di quelle del pronoto (Fig. 11 A). Margine laterale delle emielitre con una serie di spine. Lung. mm 3,7-4,5 *L. marmoratus* (Goeze)
2. Secondo articolo delle antenne pressoché uguale al primo o poco più breve *Patapius* Horv. (1 specie)
Spine degli occhi grandi e robuste, simili a quelle del pronoto (Fig. 11 B). Lung. mm. 3 *P. spinosus* (Rossi)
Olomediterraneo-turanica; tutta Italia, negli ambienti sabbiosi.

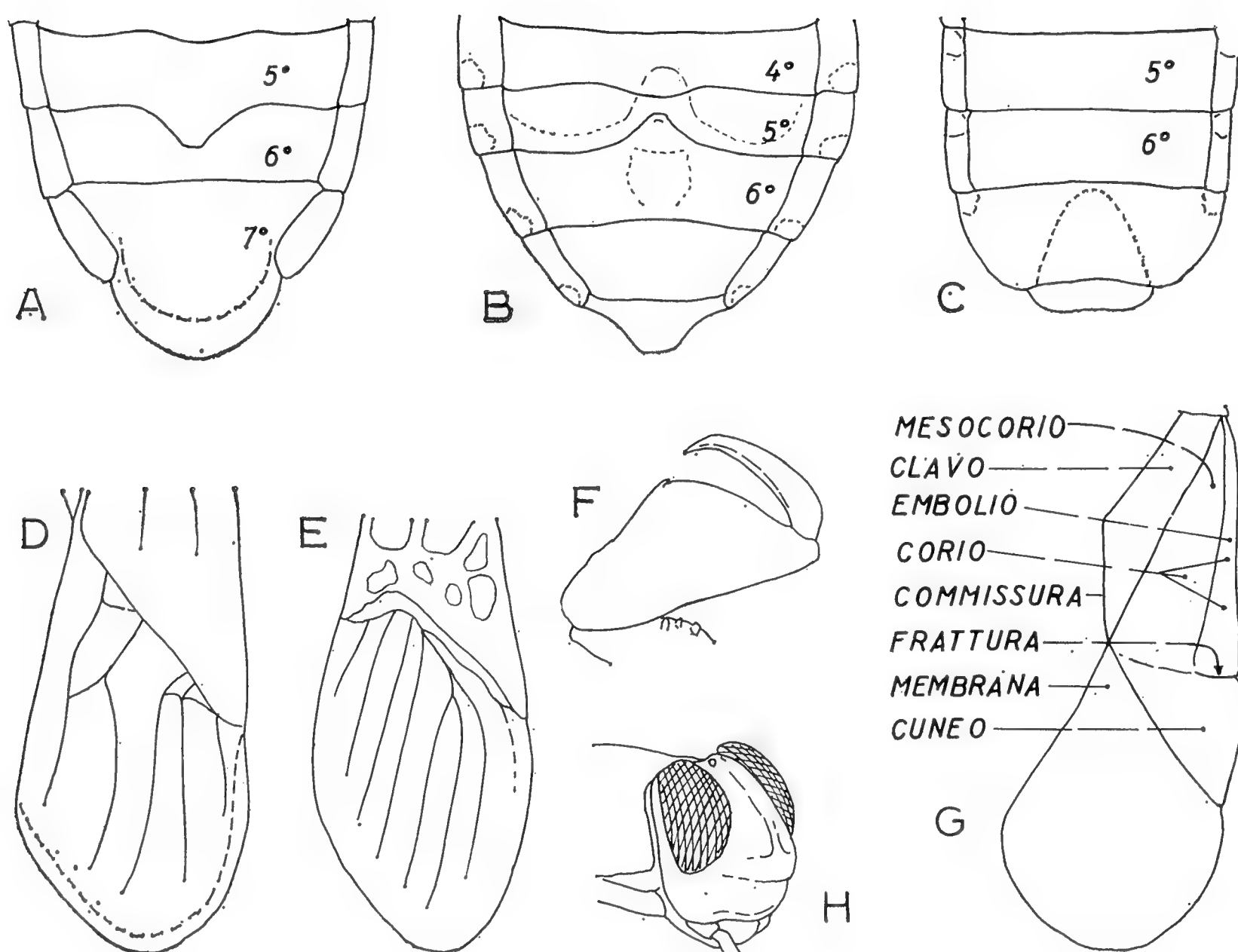


Fig. 6: A, *Pyrrhocoris apterus*, tergiti; B, *Stictopleurus crassicornis*; C, D, *Ligaeus equestris*; E, *Stictopleurus crassicornis*; F, *Phymata crassipes*; G, *Anthocoris gallurumulmi*; H, *Isometopus intrusus*.

Famiglia VIII. **Saldidae** (Saldidi, 4 generi, 24 specie)

Presso le rive di acque ferme o correnti, specie se prive o con scarsa vegetazione. Pochi Saldidi si rinvencono in ambienti lontani dall'acqua. Si spostano rapidamente da un luogo all'altro con piccoli voli e salti cacciando gli insetti più diversi. Alcune specie cercano con il rostro, lungo e robusto, le prede nascoste nel limo o nella sabbia delle rive. Molte sono le specie che hanno una forma macrottera e una brachittera, a membrana raccorciata.

1. Pronoto con un profondo solco trasversale che raggiunge i margini laterali, questi distintamente incavati (Fig. 10 L) *Chartoscirta* Stal (4 specie)
Regioni superiori con peluria rada e molto breve (Fig. 10 L). Lungh. mm 3-4
C. cincta H. S.
Euro-siberica - maghrebina; in tutta Italia, non rara.
- Pronoto con il solco trasverso appena indicato, quando è evidente si estende solo sulla parte mediana; margine laterale diritto o convesso (Figg. 7 B, 10 M) 2
2. Margine laterale del pronoto giallastro; terzo articolo dei tarsi posteriori circa 1/4 più breve del secondo (Fig. 11 D) *Halosalda* Reut. (2 specie)
Emielitre con l'estensione della colorazione nera assai variabile, di rado supera la gialla (Fig. 11 C). Lungh. mm 3-4,7 *H. lateralis* (Fall.)
Euro - maghrebina - anatolica; tutta Italia, in ambienti alofili.

- Margine laterale del pronoto pressoché interamente nero (solo in qualche rara forma molto chiara è bianco per 3/4). Terzo art. dei tarsi post. uguale o più breve del secondo 3
- 3. Prima cellula interna della membrana protesa in avanti (Fig. 11 E). Superficie delle emielitre senza distinte macchie velate *Salda* F. (v. dopo)
- Prima cellula della membrana non protesa in avanti, allineata con le altre cellule o solo leggermente più avanzata e lunga quanto la seconda (Fig. 11 L) *Saldula* Van Duzee (vedi dopo)

Genere *Salda* Fabr. (2 specie)

- Lati del pronoto e porzione prossimale laterale dell'exocorio fortemente allargata (Fig. 11 F). Regioni superiori coperte da fitta e breve peluria gialla. Lungh. ♂ mm 5,8 - 6,8 e largh. mm 2,8 - 3,3; lungh. ♀ mm 6,7 - 7,7 e largh. mm 3,4 - 3,9 *S. adriatica* Horv.
Circumadriatica; Italia settentrionale - orientale.
- Lati del pronoto e dell'exocorio non allargati (Fig. 11 L). Peluria delle regioni superiori meno densa che nella specie precedente. Lungh. ♂ mm 5 - 6,5 e largh. mm 2,2 - 2,7; lungh. ♀ mm 5,9 - 7 e largh. mm 2,9 - 3,5 *S. littoralis* (L.)
Eurosibirico - neartica; Italia sett. e Sicilia, in prossimità dei fiumi.

Genere *Saldula* Van Duzee (15 specie)

- 1. Articoli 2° - 4° delle antenne lunghi più di 2,5 volte la larghezza del colletto anteriore del pronoto (specie a colorazione poco variabile e con poche macchie chiare) 2
- Articoli 2° - 4° delle antenne più brevi di 2,5 volte il colletto anteriore del pronoto (specie con la colorazione delle emielitre molto variabile) 3
- 2. Secondo articolo delle antenne, nella parte mediana, con alcuni peli lunghi (Fig. 11 I). Emielitre con peluria chiara, breve, aderente. Macchie delle emielitre come in Fig. 11 L. Lungh. ♂ mm 3,6 - 4, ♀ mm 3,8 - 4,7 *S. orthochila* (Fieb.)
Euroturanico - sibirica; Italia sett., centrale, Calabria e Sicilia.
- Secondo art. delle antenne solo con peli brevi. Peluria del dorso breve, uniforme e chiara; solo il capo ha alcuni peli lunghi eretti (Fig. 7 B). Lungh. ♂ mm 4,6 - 5,5, ♀ mm 5,4 - 6,3 *S. variabilis* (H. S.)
Euromaghrebino - anatolica; Italia sett. (nell'Italia mer. e Sicilia vi è la razza *connectens* Horv. con alcuni peli eretti nel mesocorio).
- 3. Tibie anteriori con una breve macchia mediana nera (può mancare in rari esemplari molto chiari) (Fig. 11 G). Pronoto con i margini laterali convessi (Fig. 10 M). Estremi della colorazione delle emielitre Figg. 12 A, 12 B. Lungh. mm 3,3 - 4,5 *S. saltatoria* (L.)
Euroasiatico - mediterranea; tutta Italia, comune.
- Tibie anteriori con una lunga macchia nera (Fig. 11 H). Dorso con peluria breve e coricata. Margine laterale del pronoto nero 4
- 4. Emielitre con le macchie chiare disposte irregolarmente (Figg. 12 C, 12 D). Nelle forme più chiare il colore marginale bianco dell'exocorio ha una macchia nera nel mezzo. Secondo art. delle antenne macchiato. Lungh. 3,4 - 4,9 *S. pallipes* (F.)
Oloartico - neotropica; comune in tutta l'Italia.
- Emielitre con una fascia trasversa chiara assai distinta (Figg. 12 E, 12 F), nelle forme estreme può essere completamente chiara o pressoché nera. Secondo articolo delle antenne assai variabile. Lungh. mm 3,3 - 4,7 *S. arenicola* (Scholtz)
Europeo - olomediterraneo - macaronesico - sonora; comune in tutta l'Italia.

Famiglia IX. **Hebridae** (Ebridi; 1 genere, 3 specie)

Le specie del genere *Hebrus* Curtis sono abitanti caratteristici degli acquitrini, delle torbiere, delle anse ombreggiate, ricche di vegetazione e calme di torrenti e fiumi; camminano e corrono indifferentemente sulle sabbie e il limo delle rive come sull'acqua. Vi sono forme macrottere e microttere.

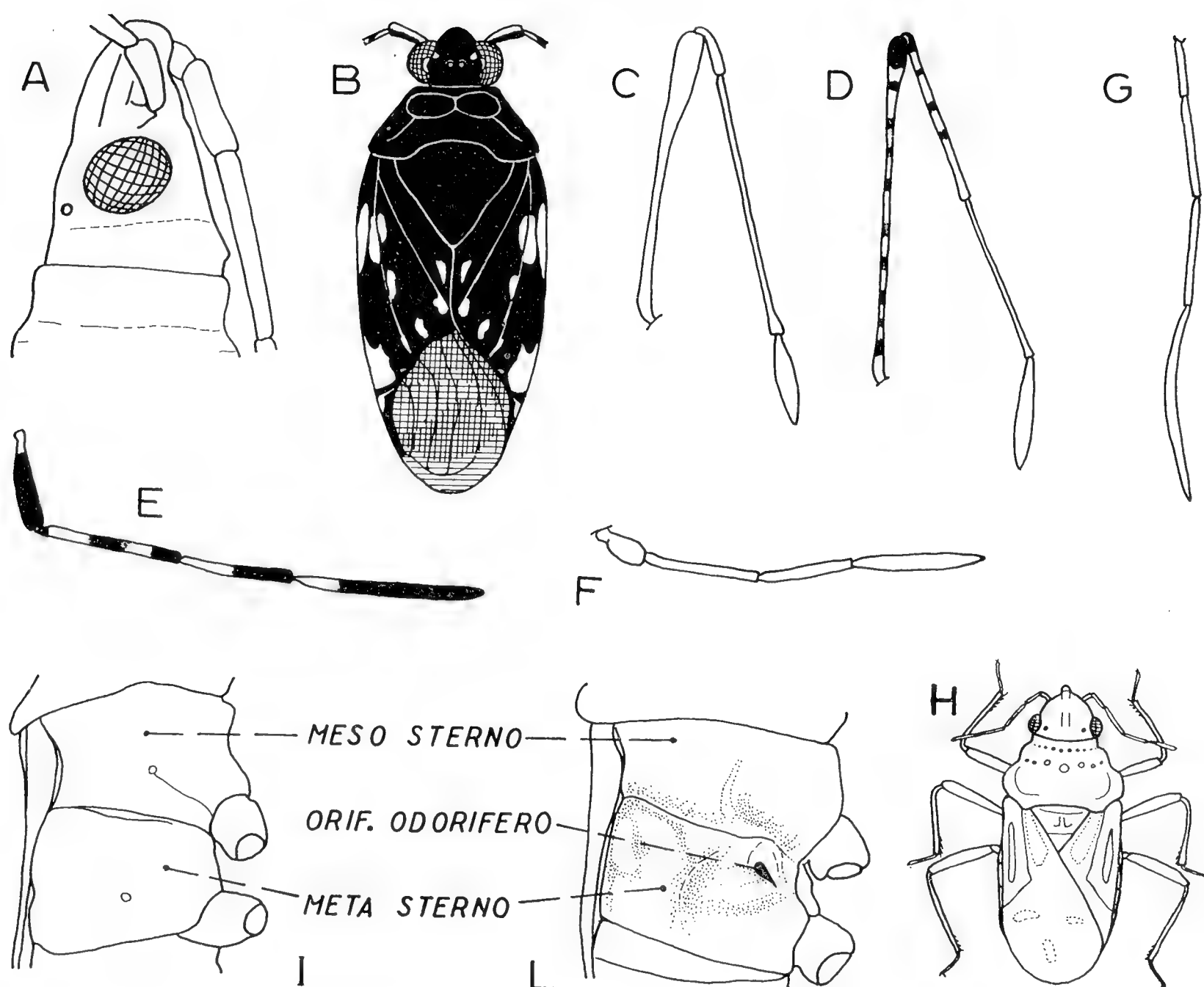


Fig. 7: A, *Anthocoris nemorum*; B, *Saldula variabilis*; C, *Berytinus montivagus*; D, *Gampsocoris punctipes*; E, *Dicranocephalus agilis*; F, *Stictopleurus crassicornis*; G, *Alydus calcaratus*; H, *Hebrus ruficeps*; I, *Macevethus lineola*; L, *Enoplus scapha*.

- Primo articolo delle antenne di poco più lungo o uguale al secondo [la lunghezza media dei vari articoli è rappresentata dal rapporto 10 : 10 : 16,6 : 7,5 : 10,4]. Corpo castaneo rossiccio. Lungh. mm 1,61 - 1,7 (Fig. 7 H) *H. ruficeps* Thomson
Euro-siberica; Italia sett., non comune e rara nella forma alata.
- Primo art. delle antenne circa 1/3 più lungo del secondo [la lunghezza media dei vari articoli è rappresentata dal rapporto 10 : 7,1 : 9,6 : 5,6 : 8,4 (Fig. 12 G)]. Corpo nero - castaneo. Lungh. mm 1,9 - 2 *H. pusillus* (Fall.)
Euro - mediterraneo - turanica; tutta Italia, comune.

Famiglia X. **Mesoveliidae** (Mesovelidi; 1 genere, 2 specie)

Le specie del genere *Mesovelgia* Curtis frequentano le rive tranquille; preferiscono stare sulle foglie flottanti piuttosto che correre sull'acqua. Vi sono forme macroterre e attere.

- Femori, specialmente i posteriori, forniti di una fila di esili spine nere (Fig. 4 A). Primo articolo delle antenne con una spina nera nel terzo distale. Lungh. forma attera mm 2,5 - 3, forma macroterra mm 3 - 3,5 *Mesovelgia furcata* (Muls. & Rey)
Euro-siberica; Italia sett.
- Femori posteriori senza spine. Primo articolo delle antenne con due spine nere nel terzo distale. Lungh. forma attera mm 2,3 - 3, forma macroterra mm. 2,5 - 3,5 *M. vittigera* (Horv.)
Mediterraneo - etiopica; Italia appenninica e isole, non rara.

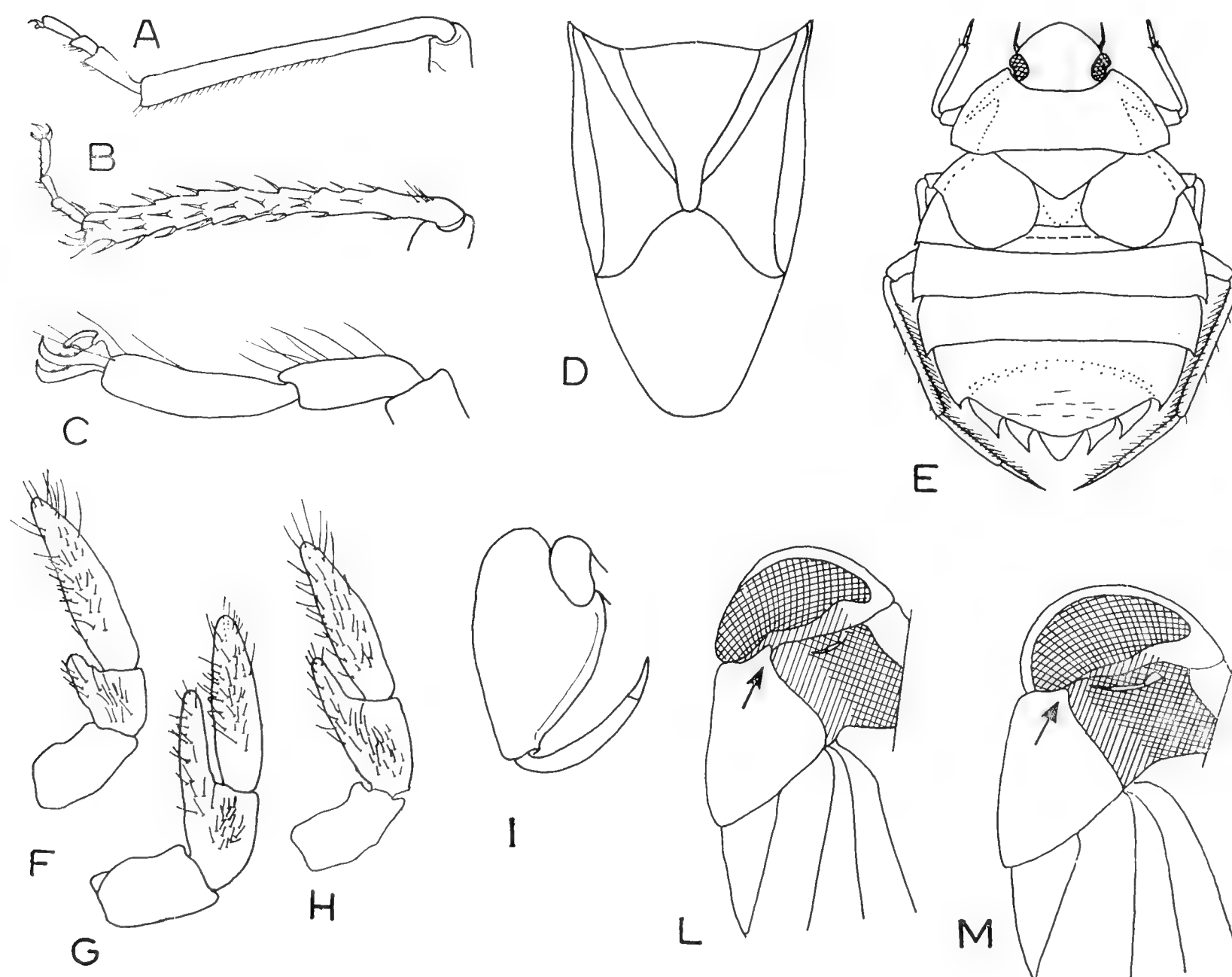


Fig. 8: A, *Carpocoris mediterraneus*; B, *Brachypelta aterrima*; C, *Acanthosoma haemorrhoidale*; D, *Cyphostethus tristriatus*; E, *Aphelocheirus aestivalis*; F, *Nepa sardiniensis*; G, *Nepa cinerea cinerea*; H, *Nepa cinerea seurati*; I, *Naucoris cimicoides*; L, *Notonecta viridis*; M, *Notonecta glauca*.

Famiglia XI. **Hydrometridae** (Idrometrindi; 1 genere, 2 specie)

Le due specie del genere *Hydrometra* Latr. si trovano ai bordi delle acque dolci più diverse; camminano lentamente sulle erbe flottanti, sui detriti, sui sassi ed occasionalmente anche sull'acqua. Si nutrono di piccoli animali, spesso morenti o già morti. Hanno forme macroterre e brachittere.

- Porzione anteriore del capo, oltre gli occhi, 2 volte più lunga della parte posteriore (Fig. 3 E). Lungh. mm 9 - 13 *Hydrometra stagnorum* (L.)
Euro - mediterranea; comune in tutta Italia.
- Porzione del capo avanti agli occhi una volta e mezza più lunga della porzione posteriore. Lungh. mm 5 - 9 *H. gracilentus* Horv.
Europeo - centrosettentrionale - sibirica; Italia settentrionale (Trentino - Alto Adige e Lombardia).

Famiglia XII. **Veliidae** (Velidi; 2 generi, 11 specie)

Si trovano negli ambienti più tranquilli degli acquitrini e dei torrenti, dove cacciano ditteri e altre piccole prede, correndo rapidi sulla superficie dell'acqua. Sono più comuni le forme attere che quelle alate.

- Lunghezza del corpo mm 2,4 *Microvelia* Westw.
- Lunghezza del corpo da mm 5,5 a 9,3 *Velia* Latr.

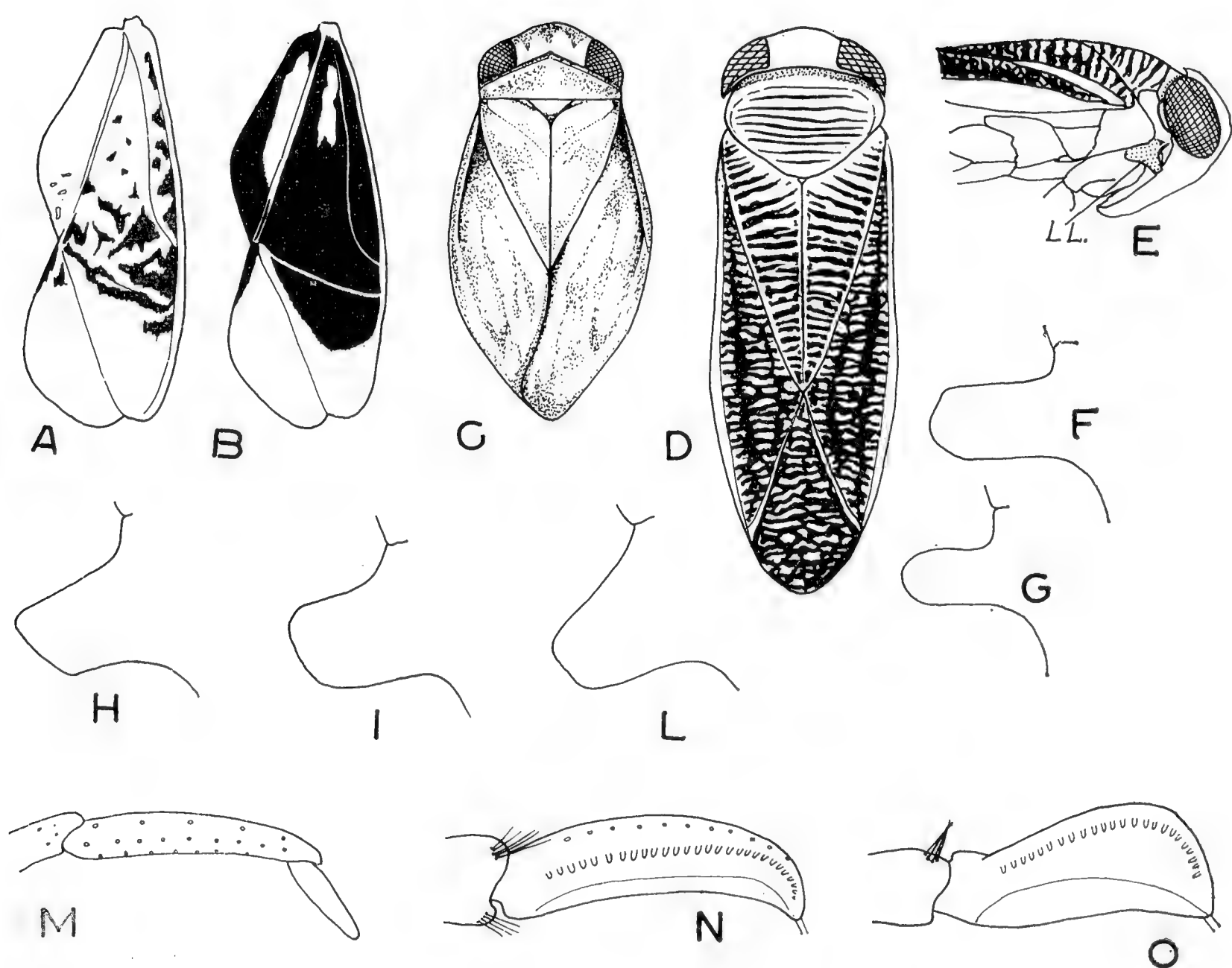


Fig. 9: A, B, *Notonecta glauca*; C, *Micronecta meridionalis*; D, E, *Sigara limitata*; F, *Sigara italica*; G, *Sigara fossarum*; H, *Hesperocorixa linnei*; I, *Parasigara transversa*; L, *Arctocorisa carinata*; M, *Cymatia rogenhoferi*; N, *Corixa punctata*; O, *Corixa affinis*.

Genere *Microvelia* Westw. (2 specie)

- Pronoto provvisto nella metà anteriore di due macchie gialle (Fig. 12 H). Lungh. mm 1,4 - 1,8 *M. reticulata* (Burm.)
Eurosibirica; quasi tutta l'Italia, non rara.
- Pronoto con le due macchie gialle fuse in una fascia continua (Fig. 12 I, pronoto di forma alata). Lungh. mm 1,6 - 2,4 *M. pygmaea* (Duf.)
Eurosibirica - mediterranea.

Genere *Velia* Latr. (9 specie)

1. Segmenti del connexivo completamente giallo-ocra. Forma del 9° tergite maschile Fig. 13 B e del femminile Fig. 13 A. Forma macroterra comune; forma brachittera rara. Lungh. mm 7,9 - 9,3 *V. rivulorum* (F.)
Mediterranea occidentale; Italia appenninica, Sicilia, Sardegna.
- Segmenti dei connexivi con gli angoli posteriori neri 2
2. Forma del 9° tergite come nelle Figg. 13 C e 13 D. Lungh. mm 6,05 - 7,3 (Fig. 2 G) *V. currens* (F.)
Alpino-appenninica; comune dalla Calabria all'arco alpino (compreso).
- Forma del 9° tergite dei due sessi come in Figg. 12 M, 12 N. Femmina con l'addome leggermente curvato (Fig. 12 L). Lungh. mm 5,8 - 8,2 *V. gridellii* Tam.
Alpino-appenninica; endemismo italiano, comune.

Famiglia XIII. **Gerridae** (Gerridi; 1 genere, 15 specie)

Le specie del genere *Gerris* Fabr. si differenziano da tutti gli Eterotteri per il loro corpo affusolato, le zampe medie e posteriori molto lunghe, sottili e la capacità di correre e pattinare sulla superficie dell'acqua. Essi possono risalire forti correnti. Le zampe anteriori, pur non essendo particolarmente adatte ad afferrare, servono a catturare e trattenere ditteri e altre piccole prede che succhiano con il corto rostro.

1. Angoli laterali posteriori del 7° segmento addominale prolungati in una punta acuta (Figg. 13 G - 13 L). 1° articolo delle antenne più lungo del 2° più il 3° (Fig. 13 F) 2
- Angoli laterali posteriori del 7° segmento non prolungati in punta acuta (Figg. 14 A - 14 C, 14 F, 14 G, 15 A - 15 E). 1° articolo delle antenne così lungo o più breve del 2° più il 3° (Fig. 14 D, 14 H, 14 I) 3
2. Le punte del 7° segmento addominale sorpassano o eguagliano il segmento genitale (Figg. 13 G, 13 H). Antenne (Fig. 13 F). Lungh. mm 13 - 16. *G. paludum* (F.) Euro-sibirica; tutta Italia non molto comune la forma alata, rara la forma brachittera.
- Le punte del 7° segmento sono più brevi (Figg. 13 I, 13 L). Lungh. ♂ mm 12 - 13, ♀ mm 16 - 17 *G. najas* (De Geer) Euro-maghrebino - anatolica; tutta Italia, comune nella forma attera, rara nella forma alata.
3. Disco del pronoto al centro giallo ferrugineo (Fig. 4 C) 4
- Disco del pronoto concolore bruno o nero 5
4. Lungh. mm 9,5 - 11,5. Estremità ventrale dell'addome Figg. 13 E, 14 A *G. thoracicus* (Schumm.) Euro-turanica; tutta Italia, non molto comune.
- Lungh. mm 12 - 14,5. Estremità dell'addome Figg. 14 F, 14 G; insetto intero Fig. 4 C *G. costai* (H. S.) Europea centromeridionale - anatolico-iraniana; tutta Italia, comune.
5. Tubercolo glandulare del metasterno concolore e non prominente. Femori anteriori gialli con una banda nera (Fig. 14 E); antenne pure parzialmente gialle (Fig. 14 D). Estremità dell'addome Figg. 14 B, 14 C. Lungh. mm 8 - 10 *G. lacustris* (L.) Palearctica; tutta Italia, comune nella forma macrottera e molto meno nelle forme brachittera e attera.
- Tubercolo glandulare del metasterno giallo e prominente. Lungh. del corpo mm 10 - 13 6
6. Secondo art. delle antenne circa 0,55 volte il primo (Fig. 14 H). Femmina con le apofisi terminali dell'addome curve verso l'alto (Figg. 15 A - 15 C). Lungh. mm 10,5 - 13 *G. gibbifer* (Schumm.) Euro-anatolico-maghrebina; Italia settentrionale-occidentale, comune.
- Secondo art. delle antenne circa 0,75 volte il primo (antenne più esili e chiare, Fig. 14 I). Femmina con le apofisi terminali dell'addome diritte (Figg. 15 D, 15 E). Lungh. mm 10 - 12,5 *G. maculatus* (Tam.) Mediterranea orientale; tutta Italia, non raro.

Famiglia XIV. **Dipsocoridae** (Sin. *Cryptostemmatidae*)
(Dipsocoridi o Crittostemmatidi; 2 generi, 3 specie)

Vivono nei muschi presso le sorgenti, i torrenti e talvolta nel greto stesso; qualche specie si trova in nidi di formiche.

- Rostro proteso fino alle coxe posteriori *Ceratocombus* Signoret (1 specie)
Margine laterale dell'emielitre, verso il mezzo, con un incavo appena indicato (Fig. 15 F). Terzo articolo delle antenne circa 1/3 più breve del 2°. Castaneo-nero. Lungh. mm 1,5 - 2,3 *C. coleopratus* (Zett.) Europea centrosettentrionale - anatolico-sibirica; Italia settentrionale.
- Rostro proteso fino alle coxe anteriori *Cryptostemma* H. S. (2 specie)
Margine laterale delle emielitre, verso il mezzo, con un netto incavo (Fig. 15 G). Terzo articolo delle antenne circa 1,8 volte il 1° più il 2°. Castaneo chiaro. Lungh. mm. 1,8 - 2,8 *C. alienum* H. S. Euro-anatolica; Italia settentrionale, comune nella forma macrottera.

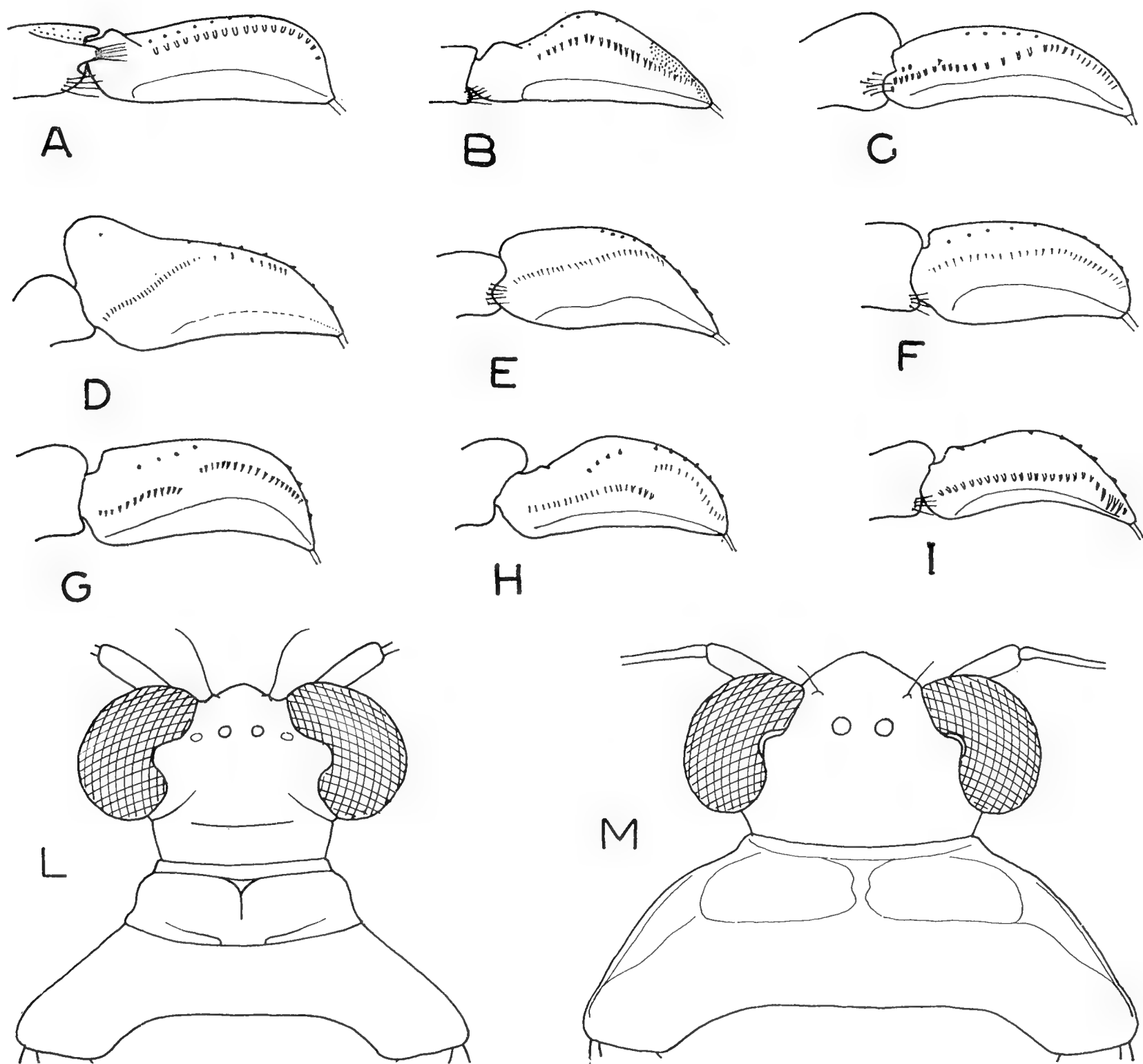


Fig. 10: A, *Hesperocorixa linnei*; B, *Parasigara transversa*; C, *Arctocorisa carinata*; D, *Sigara italica*; E, *Sigara fossarum*; F, *Sigara lateralis*; G, *Sigara striata*; H, *Sigara limitata*; I, *Sigara nigrolineata*; L, *Chartoscirta cincta*; M, *Saldula saltatoria*.

Famiglia XV. **Isometopidae** (Isometopidi; 1 genere, 2 specie)

- La specie più nota appartiene al genere *Isometopus* Fieb., ha il 2° articolo delle antenne lungo circa 1,9 volte il 3°; rostro proteso fino al 2° sternite; occhi ovali senza incavi; capo, pronoto e scutello castanei, emielitre più chiare e punta dello scutello bianca (Figg. 6 H, 15 H). Lungh. mm 3-4 *Isometopus intrusus* (H. S.)
Europa; Italia settentrionale e Sicilia, su latifoglie, raro.

Famiglia XVI. **Miridae** (Sinonimo *Capsidae*)
(Miridi o Capsidi; 113 generi, oltre 400 specie)

Comprende poco meno di metà delle nostre specie di Eterotteri; vivono negli ambienti più diversi; molte sono dannose, altre utili o indifferenti¹.

(¹) Spesso è necessario ricorrere all'esame delle unghie, delle loro appendici e delle ali. Per esaminare le prime risulta più agevole preparare i tarsi di una zampa sul dorso così da esaminare l'unghia dal lato ventrale. Le ali si fanno uscire con uno spillo da sotto l'emielitra; quando l'ala si stacca si incolla su un cartellino solo con la sua parte basale. La valutazione della lunghezza dei vari articoli dei tarsi deve essere fatta osservando i tarsi di fianco. La larghezza della fronte è la distanza minima che divide i due occhi. La larghezza degli occhi va rilevata osservando l'esemplare sulla verticale.

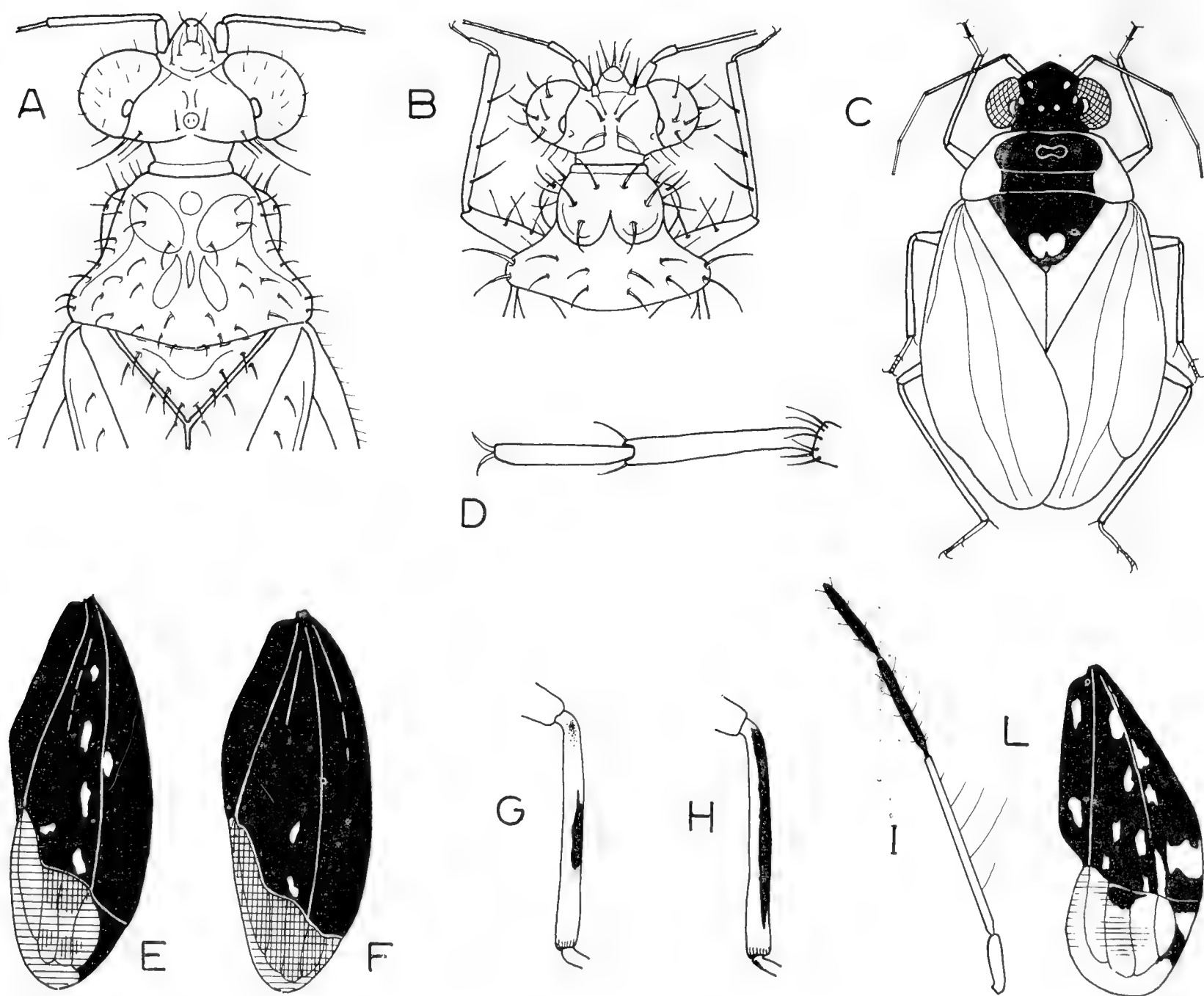


Fig. 11: A, *Leptopus marmoratus*; B, *Patapius spinosus*; C, D, *Halosarda lateralis*; E, *Salda littoralis*; F, *Salda adriatica*; G, *Saldula saltatoria*; H, *Saldula pallipes*; I, L, *Salduda orthochila*.

1. Capo proteso con il vertice provvisto di un solco longitudinale profondo (Fig. 16 I). Primo articolo delle antenne lungo e cilindrico. Latì del pronoto, almeno anteriormente, con margine acuto; porzione anteriore del pronoto senza collare (Fig. 16 I). Tarsi posteriori con il primo articolo lungo circa 2 volte il secondo (Fig. 16 L). Empodi delle unghie nastriformi e divergenti (Fig. 16 C). Colore dominante verde
Sottofam. VI. *Mirinae*, *Stenodemini*
- Capo con forma diversa e vertice privo di solco. Quando è individuabile una scultura il capo è fortemente convesso ed il pronoto ha un collare distinto (Fig. 16 A, 18 D). Tarsi posteriori e forma del corpo diversa 2
2. Tarsi con l'ultimo articolo ingrossato (Fig. 17 A). Vena cubitale dell'emielitre fortemente impressa. Membrana con una sola cella (Fig. 17 C). Lungh. mm 2-4
Sottofam. I. *Bryocorinae*
- Tarsi e vena cubitale delle emielitre diversi. Membrana delle emielitre con due celle (Fig. 17 D, F, G) 3
3. Parte distale del pronoto con un collare arrotondato e bene delimitato (Fig. 16 A, B e 18 D). Assai di rado è piccolo, in tale caso è nascosto dal margine posteriore del capo, le tibie sono angolose (Fig. 25 E) e le emielitre presentano zone opache e zone lucide (v. *Pilophorini*) 4
- Parte distale del pronoto senza collare o con collare appena indicato e piatto (non convesso); tibie a sezione rotonda od ovale, non compresse (Fig. 26 G) 7

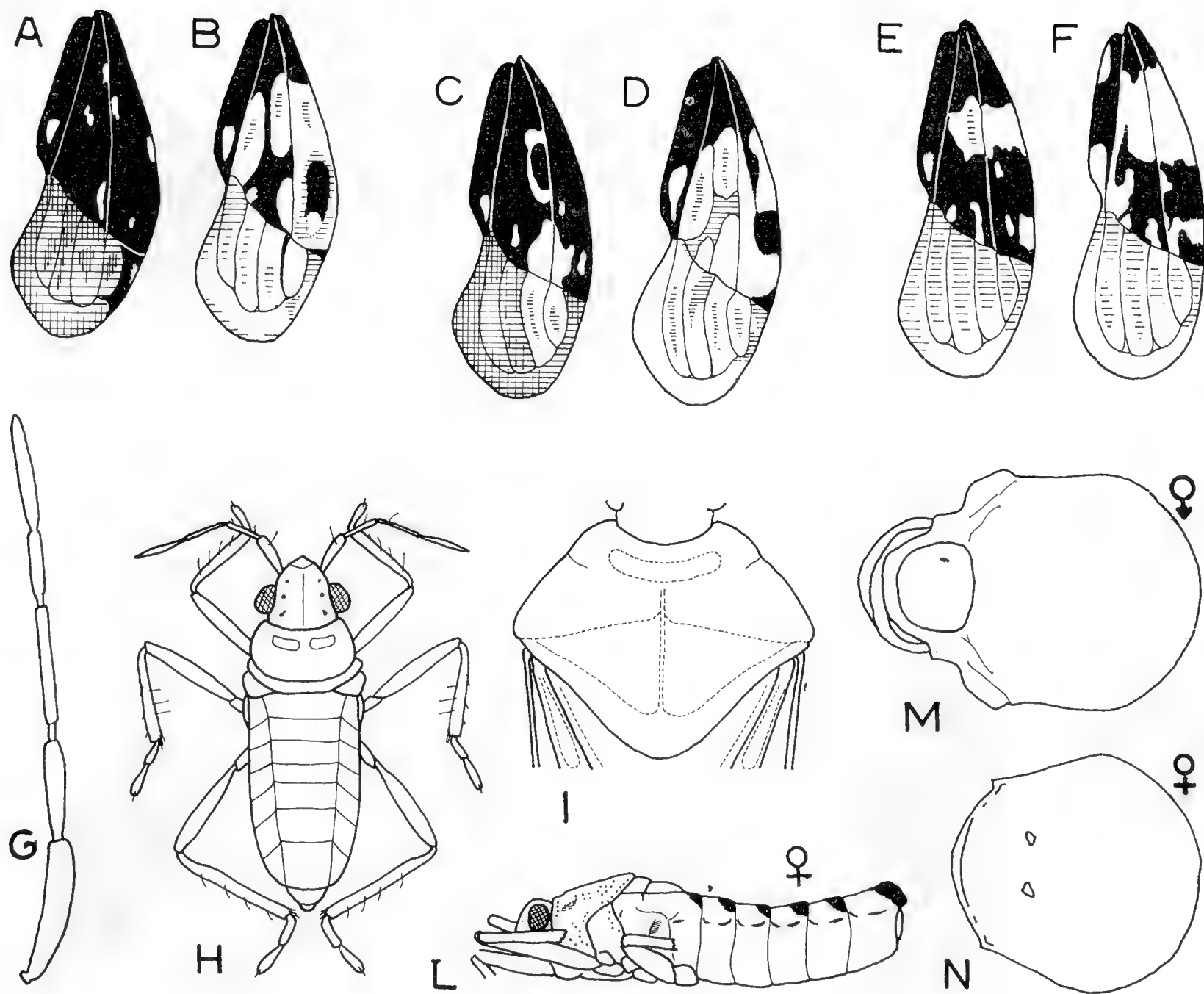


Fig. 12: A, B, *Saldula saltatoria*; C, D, *Saldula pallipes*; E, F, *Saldula arenicola*; G, *Hebrus pusillus*; L, M, N, *Velia gridellii*.

4. Base delle coxe posteriori distante dalle epipleure delle emielitre (Fig. 18 A). Capo con la lora non differenziata, per cui lo sclerite facciale, tra le guance e le buccule, appare unico (Fig. 16 A). Corpo e zampe robuste (lung. mm 3,5 - 12) e con forma diversa dalle Figg. 18 C e 23 A. Unghie ed appendici come in Figg. 16 C, E 5
- Base delle coxe posteriori assai vicina alle epipleure delle emielitre (Fig. 18 B). Capo con la lora bene differenziata (Fig. 23 B). Corpo e zampe come in Figg. 18 C e 23 A. Unghie come in Figg. 16 F, H. Lung. del corpo mm 2,0 - 6,5 6
5. Corpo con punteggiatura, specie sul pronoto e sulle emielitre, profonda, spaziata e con interspazi lisci, lucenti. Larghezza del capo pari a circa la metà della base del pronoto; vertice non limitato posteriormente da carena. Tarsi posteriori con il primo articolo nettamente più breve dei due seguenti uniti. Unghie con robusto dente basale (Figg. 16 E, 17 E). Corpo largo (Figg. 17 F, G) Sottofam. II. *Deraeocorinae*
- Corpo liscio, se punteggiato, i punti sono meno profondi e diversamente spaziati. Forma del corpo più allungata (Figg. 29 - 36). Vertice spesso con carena. Unghie prive di dente basale e con empodi divergenti (Fig. 16 C) Sottofam. VI. *Mirinae*
6. Tarsi posteriori con il secondo articolo distintamente più lungo del terzo. Forma del corpo come in Fig. 23 A. Unghie sottili e con empodi divergenti (Fig. 16 F). Corpo giallo verde con le emielitre, almeno in parte, trasparenti
- Tarsi posteriori con il secondo articolo più breve del terzo. Corpo come in Fig. 18 C. Unghie più robuste e con empodi convergenti (Fig. 16 H). Colorazione dominante castanea o fuliginea spesso con macchie di squame argentee. Sottofam. IV. *Dicyphinae*
7. Costa subtena delle ali (la prima a partire dal margine esterno, verso il mezzo) senza amo (Fig. 18 E). Primo articolo del rostro talvolta molto più grosso dei seguenti. Emielitre non di rado raccorciate in ambedue i sessi o solo nella femmina. Sottofam. V. *Orthotylinae*, *Pilophorini*

Spazio fra le unghie con due distinti empodi a forma di lamina (Fig. 16 G). Forma del corpo Figg. 24 C, 25 A, B, 26 A, 27 E, F. Lungh. del corpo mm 2 - 5

Sottofam. V. *Orthotylinae*, *Orthotylini*, *Halticini*

- Costa subtena delle ali con un distinto amo (Fig. 18 F). Emielitre regolarmente sviluppate in ambo i sessi. Rostro gradatamente assottigliato. Empodi filiformi (Figg. 16 D, 20 L) o invisibili con una buona lente. Forma del corpo Figg. 19 A, 20 B, 21 A, 22 D. Lungh. del corpo mm 1,5 - 7,0 Sottofam. III. *Phylinae* (= *Plagiognathinae*)

Sottofam. I. BRYOCORINAE (Briocorini; 2 generi, 2 specie)

1. Lunghezza del primo articolo delle antenne superiore alla metà (0,7 volte) della larghezza del capo. Terzo articolo delle antenne lungo quanto il quarto.
Bryocoris Fall. (1 specie)
 Emielitre nella maggior parte dei casi abbreviate (Fig. 17 B). Colore dominante giallo - castaneo. Lunghezza forma macrottera mm 3 - 4, forma brachittera mm 2 - 3
B. pteridis Fall.
 Europea centrosettentrionale siberica; Italia sett., nei boschi su Felci.
- Lunghezza del primo articolo delle antenne inferiore alla metà della larghezza del capo. Terzo articolo delle antenne circa 1/3 più lungo del quarto.
Monalocoris Dahlb. (1 specie)
 Colore dominante castaneo, margine delle emielitre più chiaro. Solo nella forma macrottera lunga mm 2 - 3
M. filicis (L.)
 Euro - siberica; comune in tutta Italia su felci.

Sottofam. II. DERAEOCORINAE (Dereocorini; 3 generi, 18 specie)

Genere *Deraeocoris* Kirschb. (13 specie)

1. Lunghezza del corpo superiore a mm 5 (sbg. *Deraeocoris*) 2
- Lunghezza del corpo inferiore a mm 5 (sbg. *Camptobrochis*) 5
2. Collare anteriore del pronoto liscio, lucente. Colorazione variabile tra l'arancio e il nero. Gli esemplari tipici sono arancio, hanno l'estremità del capo, il primo articolo delle antenne e parte del secondo, l'estremità del cuneo, le regioni mediane inferiori, la base dei femori ed i tarsi neri (Figg. 17 D, E, F). Il colore nero si può estendere fino a coprire tutta la superficie. Lungh. mm 6,5 - 7,4 *D. ruber* (L.)
 Euro - maghrebina - sonora; comune in tutta Italia, zoofago e fitofago.
- Collare anteriore del pronoto zigrinato, opaco 3
3. Scutello con punteggiatura nera profonda come su pronoto ed emielitre. Colore della forma tipica giallo - grigio o arancio con cuneo rosso; ma vi sono forme completamente nere con diverse variazioni intermedie. Lungh. mm 8,5 - 10 *D. olivaceus* (F.)
 Medioeuropea circumadriatico - transionico - maghrebina; Italia sett., nelle zone montane. Caccia insetti ed in particolare bruchi e pupe che vivono su latifoglie.
- Scutello liscio o con punteggiatura rada, visibile solo con forti ingrandimenti 4
4. Emielitre glabre. Colore superiore bruno - giallo, con poche macchie nere. Lungh. mm 6,4 - 7,2 *D. annulipes* (H. S.)
 Medioeuropea - siberica; Italia sett. su resinose dove insegue Afidi ed altri piccoli insetti.
- Regioni superiori con fitta peluria. Colore di pronoto ed emielitre rosso con macchie nere assai variabili. La Fig. 17 G dà la distribuzione del colore nero nella forma tipica. Lungh. mm 5 - 7 *D. schach* (Fl.)
 Sudeuropeo - anatolica; comune nell'Italia appenninica e in Sicilia.
5. Scutello liscio. Colore del corpo giallo - castaneo con macchie più oscure. Punteggiatura delle emielitre chiara anche ai lati. Lungh. mm 3,8 - 4,5 *D. lutescens* (Schill.)
 Medioeuropeo - mediterraneo - anatolico - iranica; tutta Italia ed isole su diverse latifoglie, specie su tiglio, dove caccia afidi.
- Scutello punteggiato. Giallo - grigio con piccole macchie nere. Testa, almeno in parte, nera. Lungh. mm 3,7 - 4,4 *D. punctulatus* (Fall.)
 Euro - siberico - olomediterraneo - turanica; tutta Italia su diverse latifoglie dove caccia tisanotteri, afidi e larve di altri insetti.

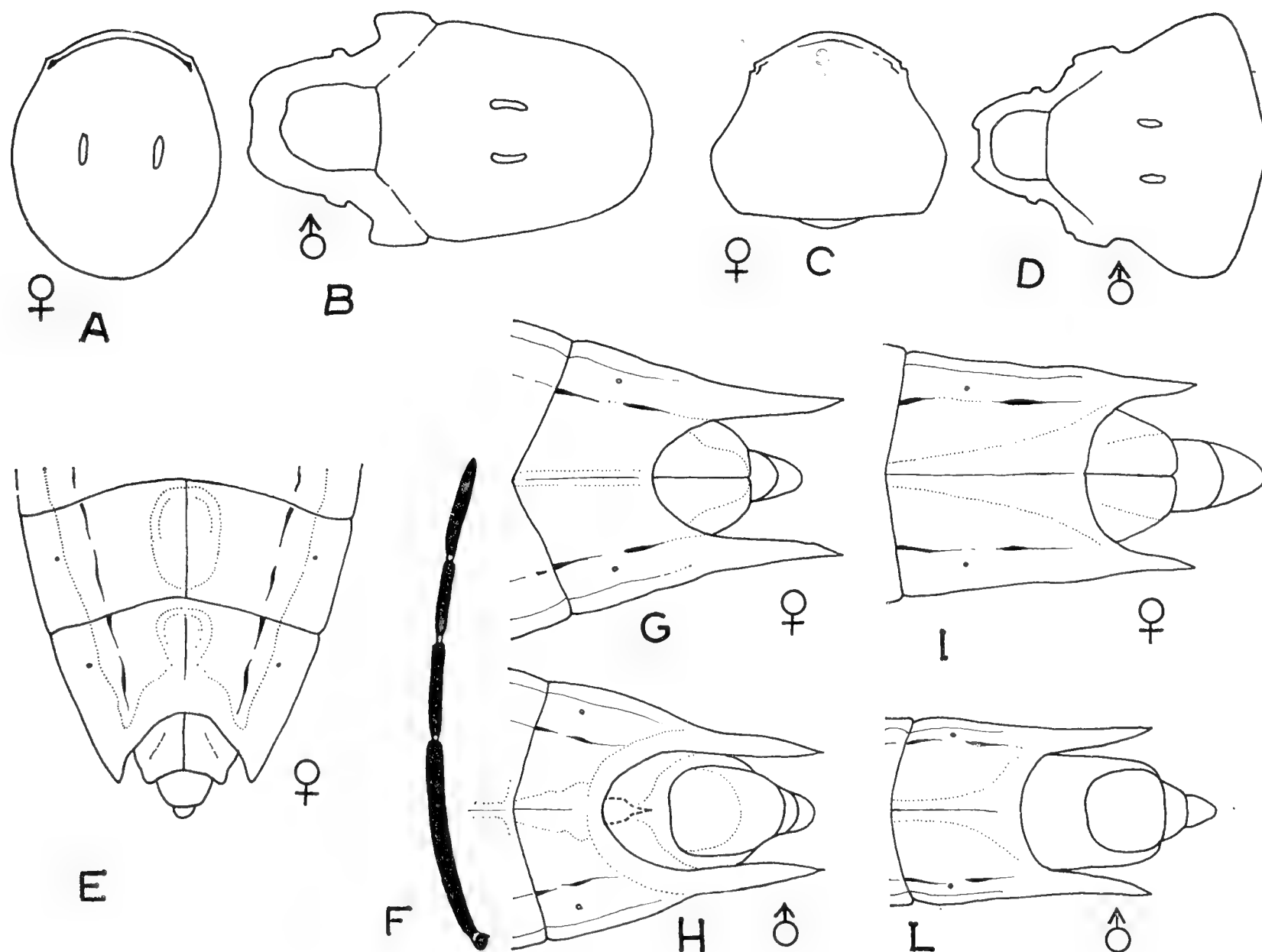


Fig. 13: A, B, *Velia rivulorum*; C, D, *Velia currens*; E, *Gerris thoracicus*; F, G, H, *Gerris paludum*; I, L, *Gerris najas*.

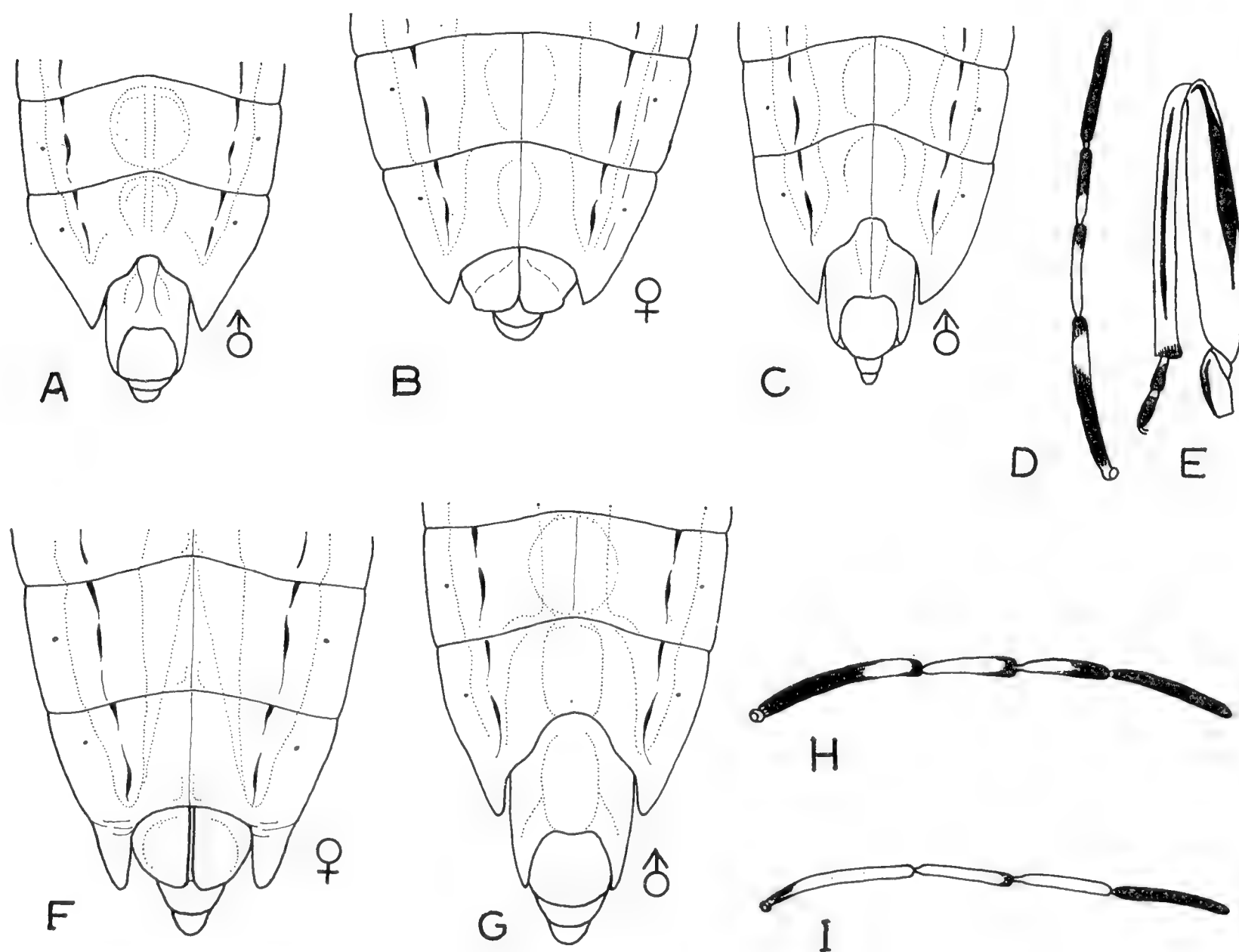


Fig. 14: A, *Gerris thoracicus*; B, C, D, E, *Gerris lacustris*; F, G, *Gerris costai*; H, *Gerris gibbifer*; I, *Gerris maculatus*.

Sottofam. III. PHYLINAE (Filini o Plagiognatini; 43 generi, 128 specie)

1. Regioni superiori con la peluria frammista a squame con riflessi metallici, argentei o gialli 2
- Regioni superiori con la peluria normale, che può essere anche molto rada fino quasi a mancare 5
2. Capo con il clipeo molto allungato (Fig. 19 F). Maschio con il secondo articolo delle antenne ingrossato (Fig. 19 D) *Criocoris* Hahn (5 specie)
- Antenne del maschio nere; secondo articolo lungo circa 1,4 volte la larghezza del pronoto e più lungo del 3° e 4° art. uniti. Antenne della femmina sottili, gialle, solo la base del 1° articolo è nera (Fig. 19 E); 2° art. lungo quanto la larghezza del pronoto e poco più dei due ultimi articoli uniti. Femori neri con l'estremità gialla. Tibie gialle con l'estremità nera. Lungh. mm 2,8 - 3,7 *C. crassicornis* (Hahn)
- Capo con il clipeo più breve (Fig. 19 G, 21 F, 22 A) 3
3. Antenne con il secondo articolo ingrossato, nella femmina più che nel maschio (Fig. 19 H, I), la sua lunghezza non è mai superiore a 10 volte il suo massimo diametro *Atractotomus* Fieb. (4 specie)
- Corpo completamente nero comprese le antenne. Femori neri con l'estremità chiara; tibie inferiormente nere e sopra chiare con punti neri. Lungh. mm 3,1 - 3,8 *A. tigripes* Muls. & Rey
- Sudeuropea occidentale - transadriatica; Italia sett. e Calabria su leguminose (*Dorycnium*).
- Antenne non ingrossate o solo leggermente il 2° articolo del maschio (Fig. 22 E, F), questo articolo è sempre più lungo di 10 volte il suo massimo diametro. Spine delle tibie circondate da un anello nero (Fig. 21 A, 22 D, G, H), che può anche mancare; in questo caso le antenne sono completamente nere o parzialmente annerite o con disegni neri. 4
4. Superficie degli occhi con gli ommatidi (gli elementi che compongono l'occhio) molto convessi, così che l'occhio appare molto rugoso; di rado è poco rugoso, nel quale caso il corpo è coperto da fitta peluria lucente. Il corpo non è mai completamente verde. *Psallus* Fieb. (v. dopo)
- Superficie degli occhi con gli ommatidi piatti, così che l'occhio appare liscio, di rado è rugoso, nel quale caso il corpo è verde. *Plagiognathus* Fieb. (v. dopo)
5. Aroli grandi, in gran parte liberi e lunghi quanto l'unghia, questa è piccola e fortemente curvata (Fig. 20 E, F). Corpo parallelo con peluria nera; capo piegato verso il basso; clipeo ingrossato (Fig. 20 G, H). *Macrotylus* Fieb. (v. dopo)
- Aroli piccoli o difficilmente visibili con buona lente; unghia vista di lato con altra forma. Capo con il clipeo meno ingrossato (Fig. 19 C, 21 G, 22 I). 6
6. Unghie più lunghe della metà del pretarso, sottili e poco curvate (Fig. 19 B, C). *Tuponia* Reut. (7 specie)
- Capo largo quanto il pronoto, posteriormente arrotondato, occhi molto grandi a superficie rugosa. Corpo parallelo, verde con peli neri; membrana oscurata con una macchia laterale e le nervature delle celle bianche. Antenne e zampe verdi senza macchie. Lungh. mm 2,5 - 3,2. *T. hippophaes* (Mey.)
- Indoeuropeo - olomediterranea; lungo le coste italiane è comune sui tamarici, meno sulla miricaria.
- Unghie e capo con altri caratteri. 7
7. Femori chiari, tibie con le spine senza anello basale nero, capo poco piegato verso il basso e con il 1° articolo del rostro più breve del capo (Fig. 20 A). Primo articolo dei tarsi circa metà del secondo e questo più lungo del terzo (Fig. 20 C). *Phylus* Hahn (3 specie)
- Corpo nero o nero - castaneo, membrana oscura con una macchia chiara laterale (Fig. 20 B). Antenne gialle con la base del primo articolo annerita. Zampe completamente giallo chiare. Unghie viste di lato come in Fig. 20 D. Lungh. mm 4,4 - 5,3. *P. coryli* (L.)
- Europea; tutta Italia, zoofago e fitofago, specialmente sul nocciolo.
- Femori più o meno neri, ma non di rado anche chiari, nel quale caso le tibie hanno le spine circondate da un anello nero. 8

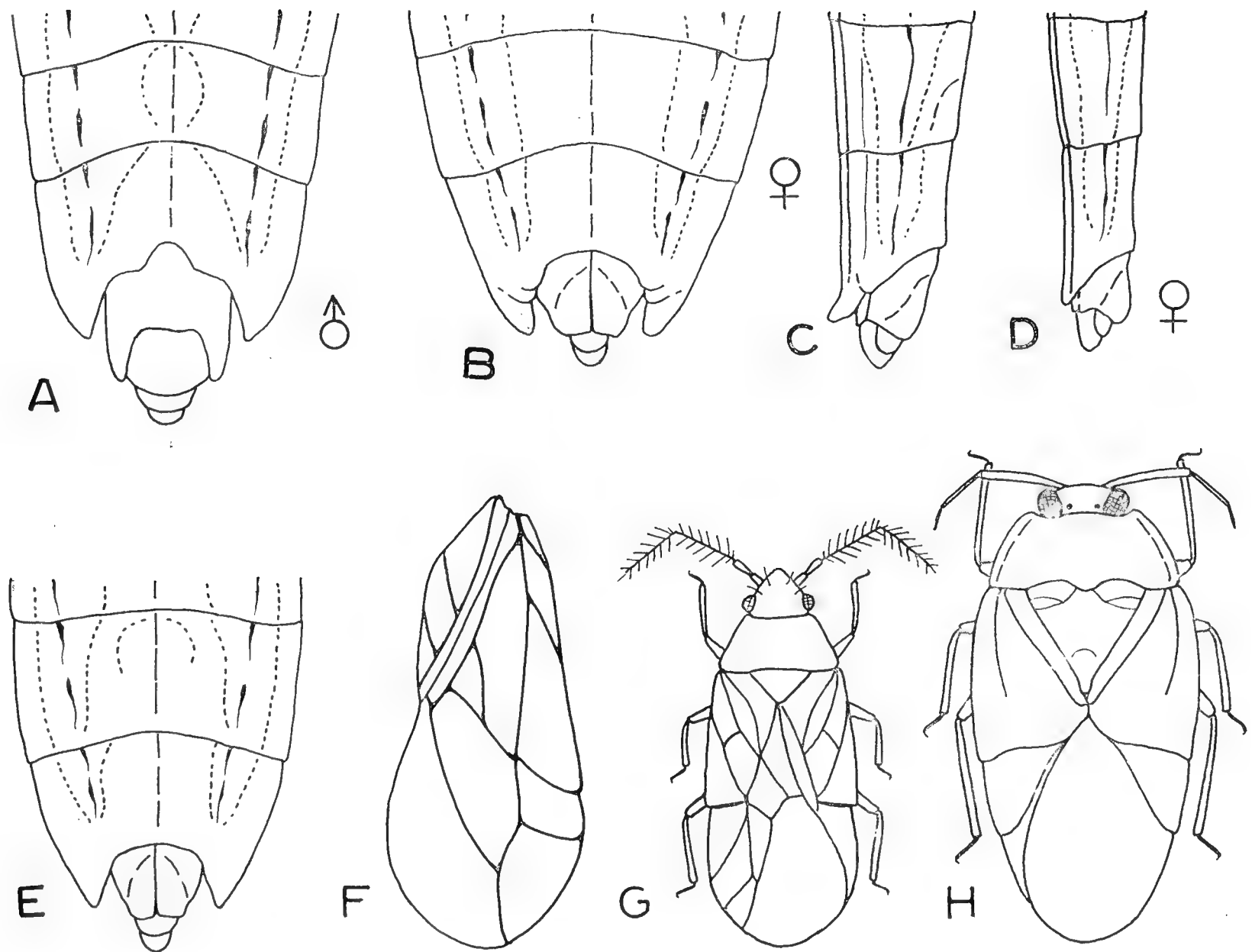


Fig. 15: A, B, C, *Gerris gibbifer*; D, E, *Gerris maculatus*; F, *Ceratocombus coleoptratus*; G, *Cryptostemma alienum*; H, *Isometopus intrusus*.

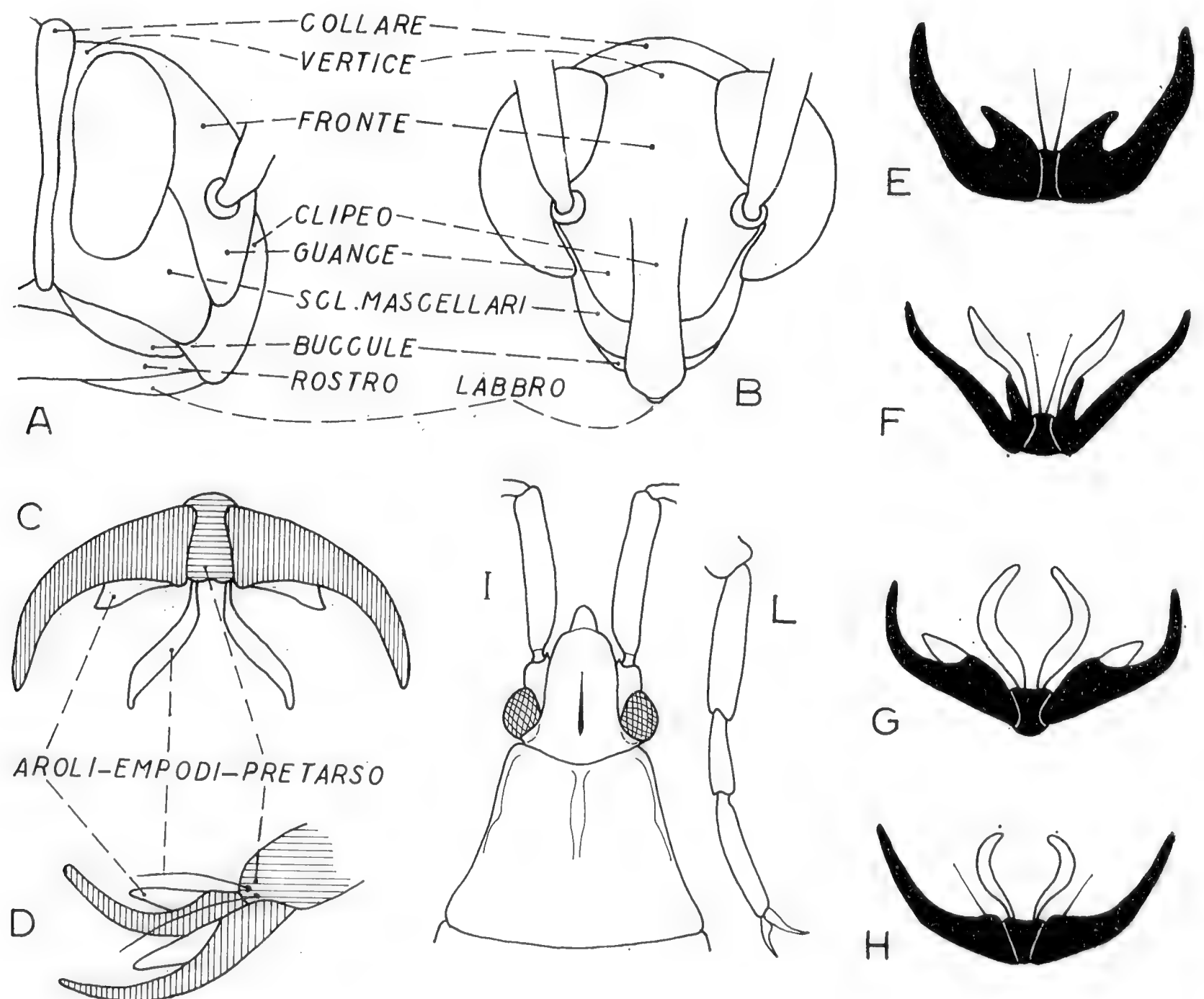


Fig. 16: A, B, C, D, Mirinae, *Adelphocoris*; E, Deraeocorinae; F, Dicyphinae; G, Orthotilinae; H, Pilophorini; I, L, Stenodemini.

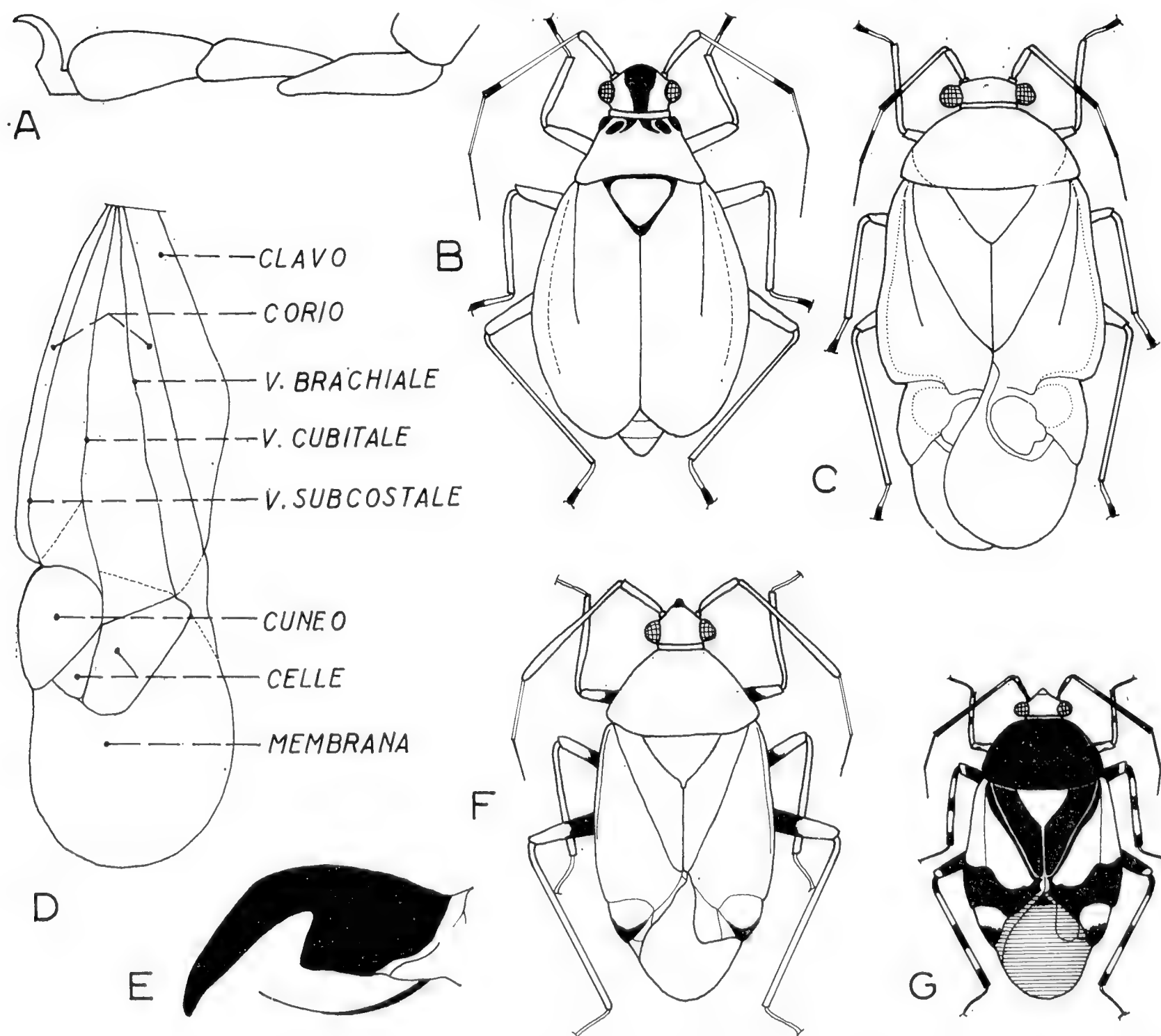


Fig. 17: A, C, *Monalocoris filicis*; B, *Bryocoris pteridis*; D, E, F, *Deraeocoris ruber*; G, *Deraeocoris schach*.

8. Larghezza del capo uguale (nelle forme brachittere) o di poco più breve (nel maschio macroterro circa $1/5$) della larghezza basale del pronoto. Margine posteriore del vertice arrotondato. Antenne con il 2° articolo più breve della larghezza del capo (Fig. 22 L). Specie nere. *Chlamydatus* Curt. (v. dopo)
- Larghezza del capo nettamente inferiore (almeno di $1/4$) alla larghezza posteriore del pronoto. Capo non troncato verticalmente e con il vertice regolarmente arrotondato². Antenne con gli articoli cilindrici, elitre macroterre. *Plagiognathus* Fieb. (v. dopo)

Genere *Macrotylus* (7 specie)

1. Regioni superiori e inferiori nere; capo con due macchie chiare sul vertice; estremi anteriori e posteriori del cuneo e vene delle celle bianche. Clipeo molto ingrossato (Fig. 20 G). Unghie Fig. 20 E, F. Lungh. mm 4,6 - 5,3 *M. quadrilineatus* (Schr.)
 Europea centromeridionale - orientale; Italia su *Salvia* dove attacca i minuti insetti che restano attaccati ai peli glandulosi della pianta.
- Regioni superiori mai completamente nere. 2
2. Regioni superiori verde - cenere; capo nero con due macchie chiare sul vertice; terzo anteriore del pronoto e fascia mediana dello scutello nera. Capo visto di fronte come in Fig. 20 H. Lungh. mm 3,5 - 5,2. *M. herrichi* Reut.
 Europea centromeridionale - orientale - anatolica; Italia sett. e centrale su *Salvia* come la precedente
- Regioni superiori verde chiaro cosparse di macchie formate da gruppi di peli neri (Fig. 20 I). Membrana nera con le vene delle celle verdi; macchie chiare come nella figura. Petto nero. *M. paykulli* (Fall.)
 Europea ovestmediterranea - anatolico - turanica; in diverse regioni italiane su *Ononis*.

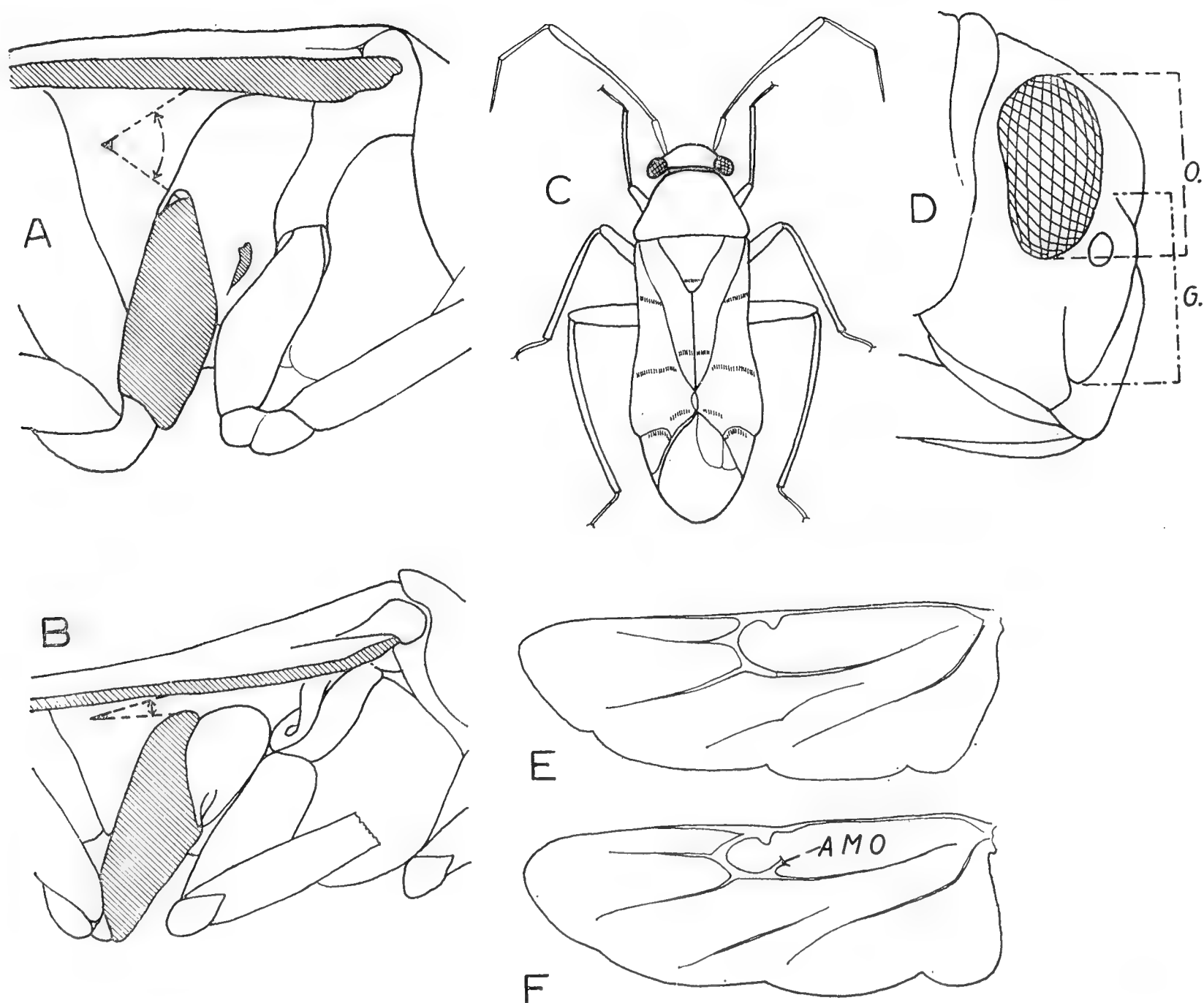


Fig. 18: A, *Calocoris alpestris*; B, *Dicyphus errans*; C, *Pilophorus clavatus*; D, Capsodini; E, *Orthotylus*; F, *Phylus coryli*.

Genere *Psallus* (24 specie)

Il maggior numero di specie vive su piante e cespugli attaccati da gorgoglioni, che sembra costituiscano il suo principale nutrimento.

1. Regioni superiori bianco-grigie cosparse di macchie puntiforme castanee, esclusa la porzione anteriore dello scutello ed il cuneo; questo è bianco. Membrana oscurata con macchie come in Figg. 22 D. Lungh. mm 3-4. *Ps. salicellus* (H. S.)
Europea centrosettentrionale-pontica; Italia sett. su nocciolo, alno e quercia.
- Regioni superiori prive di macchie puntiformi oscure. 2
2. Primo articolo delle antenne completamente nero. 3
- Primo articolo delle antenne completamente chiaro o con punti o anelli neri. 4
3. Antenne con il 3° e 4° articolo uniti più lunghi del 2°; questo nel maschio è nero, nella femmina ha la parte basale nera e distale grigio-bruna o rossiccia (Fig. 22 E). Corpo nero coperto da peli neri con frammiste squame argentee. Cuneo da nero a bruno-castaneo, giallo sulla linea basale. Zampe nero-castanee; femori con la porzione estrema chiara; tibie chiare nella porzione basale, spine nere con anello basale nero (Fig. 22 A). Lungh. mm 3,3-4,0. *Ps. ancorifer* (Fieb.)
Sudeuropea occidentale-transadriatica; in gran parte delle regioni italiane su trifoglio e altre erbacee.
- Antenne con il 3° e 4° articolo appena lunghi quanto il 2°; questo, nella femmina, è giallo con la parte distale nera (Fig. 22 F), nel maschio è nero. Corpo castaneo-

(2) I Filini di questo gruppo con il capo troncato verticalmente appartengono al gen. *Atomoscelis* Reut. (1 sp. italiana), quelli col vertice provvisto di due fossette al gen. *Monosynamma* Scott (1 sp.), quelli col vertice limitato da una carena al gen. *Sthenarus* Fieb. (3 sp.) e quelli con il clipeo così breve che il capo, visto di fronte, ha una forma ovale al gen. *Campylomma* Reut. (3 specie italiane).

nero con peli neri e squame argenteo - gialle. Cuneo rosso - castaneo o rossiccio, sulla linea basale più chiaro. Zampe castaneo - rosse; femori con porzione distale e tibie con la parte basale più chiara; spine delle tibie come nella specie precedente. Lunghezza mm 3,6 - 5,0.

Ps. ambiguus (Fall.)

Europea; Italia sett., Puglie e Calabria; fitofago su diverse latifoglie, ma pure caccia afidi, psillidi e acari.

4. Tarsi posteriori con il 3° articolo distintamente più lungo del 2° e quasi così lungo quanto il 1° più il 2°. Rientrano in questo punto alcune specie proprie delle resinose alpine e montane: *P. obscurellus* (Fall.), *P. vittatus* (Fieb.), *P. luridus* Reut., *P. picea* Reut. e altre. Per la loro separazione è necessario esaminare anche le parti genitali.

— Tarsi posteriori con il 3° articolo più breve o uguale al 2° e molto più breve del 1° più il 2°.

5

5. Femori molto più chiari con macchie e punti oscuri (Fig. 22 C). Tibie bianchicce con spine nere e cerchio basale bruno. Corpo bianchiccio o roseo o con macchie rosee. Regioni superiori con peli bianchi frammisti a neri. Occhi, visti di lato, molto grandi, allungati fino quasi alla gola (Fig. 22 B). Rostro gialliccio, all'estremità nero e proteso fino alle coxe posteriori, cuneo completamente bianco, quasi trasparente. Lungh. mm 2,7 - 3,5.

Ps. alni (F.) (= *roseus* Müll.)

Europea centroseptentrionale - sibirica; Italia sett. su diverse specie di salici, quercia e nocciolo, zoofago e fitofago.

- Femori neri o bruno neri (gli esemplari immaturi e chiari presentano macchie oscure sulla superficie inferiore dei femori); tibie giallo - chiare con spine nere e anello basale oscuro. Colore del corpo molto variabile, dominano i colori tra il nero - castaneo e il castaneo - rossiccio, specie sul capo e pronoto; emielitre sovente con la base giallo - rossa e il cuneo rosso. Regioni superiori con peli neri frammisti a squame giallo - lucenti. Occhi meno grandi che nella specie precedente. Rostro giallo - grigio e proteso fino alle coxe medie. Lungh. mm 3,8 - 4,1.

Ps. variabilis (Fall.)

Euro - maghrebina - turanico - sibirica; Italia sett., Emilia, Umbria, Lazio, Puglie e Sicilia, zoofago e fitofago, su querce e altre latifoglie.

Genere *Plagiognathus* (12 specie)

Fitofagi su diverse piante erbacee in luoghi asciutti.

1. Margine superiore e inferiore dei femori con una fascia nera (Fig. 21 B). Colore degli esemplari tipici bruno chiaro, capo bruno - nero con due macchie chiare sulla fronte; ma vi sono esemplari completamente neri (più frequenti) ed altri superiormente giallo - ocra. Antenne e zampe oscure. Rostro proteso fino alle coxe posteriori. Tibie con spine nere circondate da un grande anello nero. Lungh. mm 3,5 - 4,5.

Pl. arbustorum (F.)

Euro - sibirico - ovestmediterraneo - anatolico - turanica; in tutta Italia sull'ortica.

2. Regioni superiori con peluria nera frammista a peli chiari. Antenne giallo - castanee diverse nei due sessi (Figg. 21 C, D). Larghezza della fronte pari a 1,8 volte (♂) o 2,1 volte (♀) la larghezza dell'occhio. Colore del corpo verde - grigio, nella femmina anche giallo - verde; dorso dell'addome castaneo - verde. Membrana annerita con macchie chiare come in Fig. 21 E. Femori con macchie nere sui due lati (super. Fig. 21 I, infer. Fig. 21 H). Lungh. mm 2,9 - 3,6.

Pl. chrysanthemi (Wolff)

Euro - sibirico - ovestmediterraneo - anatolico - turanica; Italia sett., Emilia, Puglie e Sicilia, su ortiche, menta, achillea e altre.

- Regioni superiori solo con lunga peluria bianca. Antenne nere, 2° articolo della femmina con la metà basale gialliccia. Fronte 2 volte (♂) o 2,33 volte (♀) la larghezza dell'occhio. Colore del corpo assai variabile tra il nero e il giallo - grigio chiaro. Forma tipica nero - castanea con 2 macchie giallo rosse sul capo e una fascia bianca alla base del cuneo; femori nero - bruni con l'estremità chiara, tibie giallicce con le spine e l'anello basale nero. Lungh. mm 2,8 - 3,3 (la lunghezza è pari a 2,8 - 3,3 volte la larghezza del pronoto).

Pl. albipennis (Fall.)

Eurosibirica - maghrebino - turanica; in tutta Italia su *Artemisia campestris* e *vulgaris*.

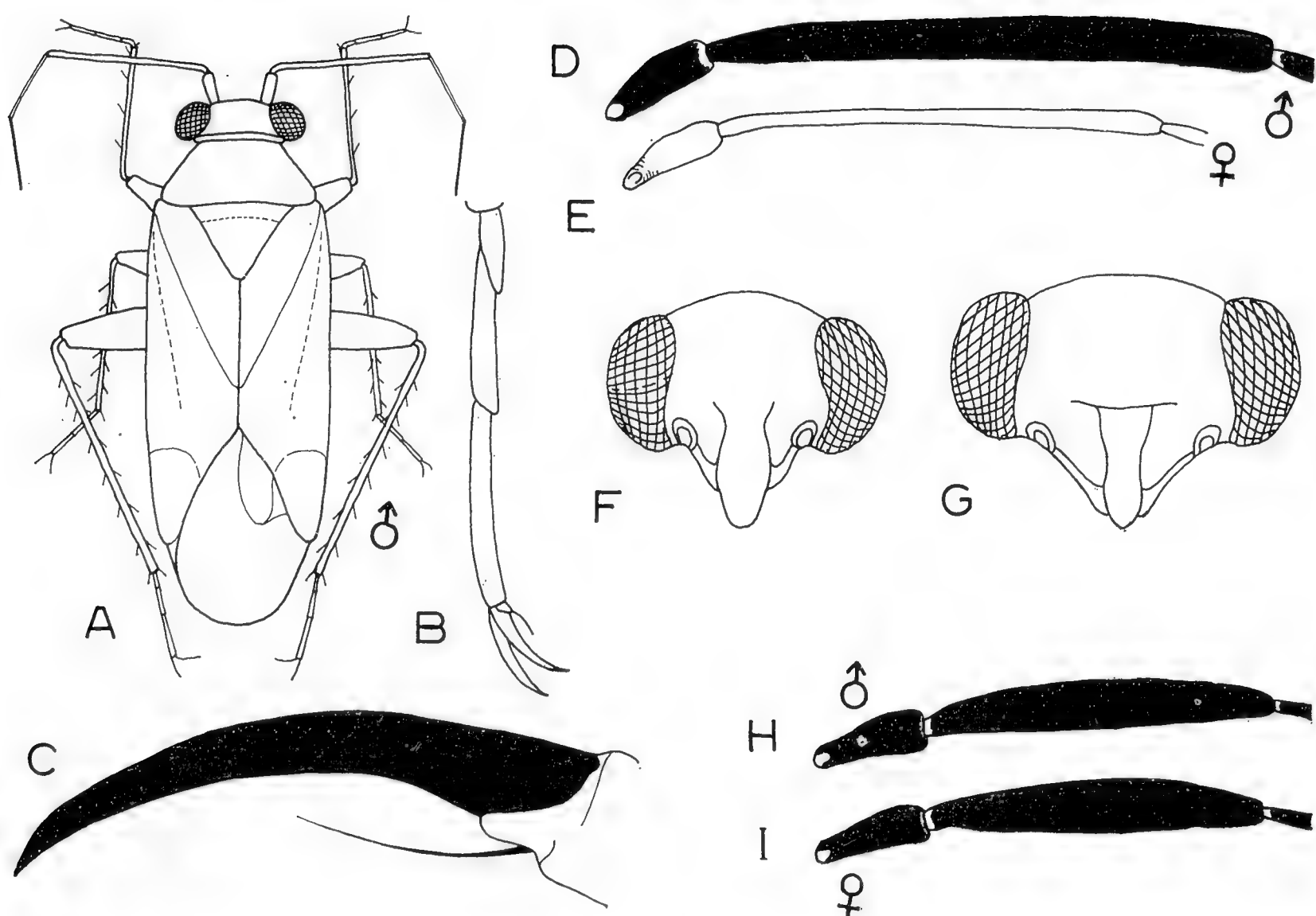


Fig. 19: A, B, C, *Tuponia hyppophaes*; D, E, F, *Criocoris crassicornis*; G, H, I, *Atractotomus tigris*.

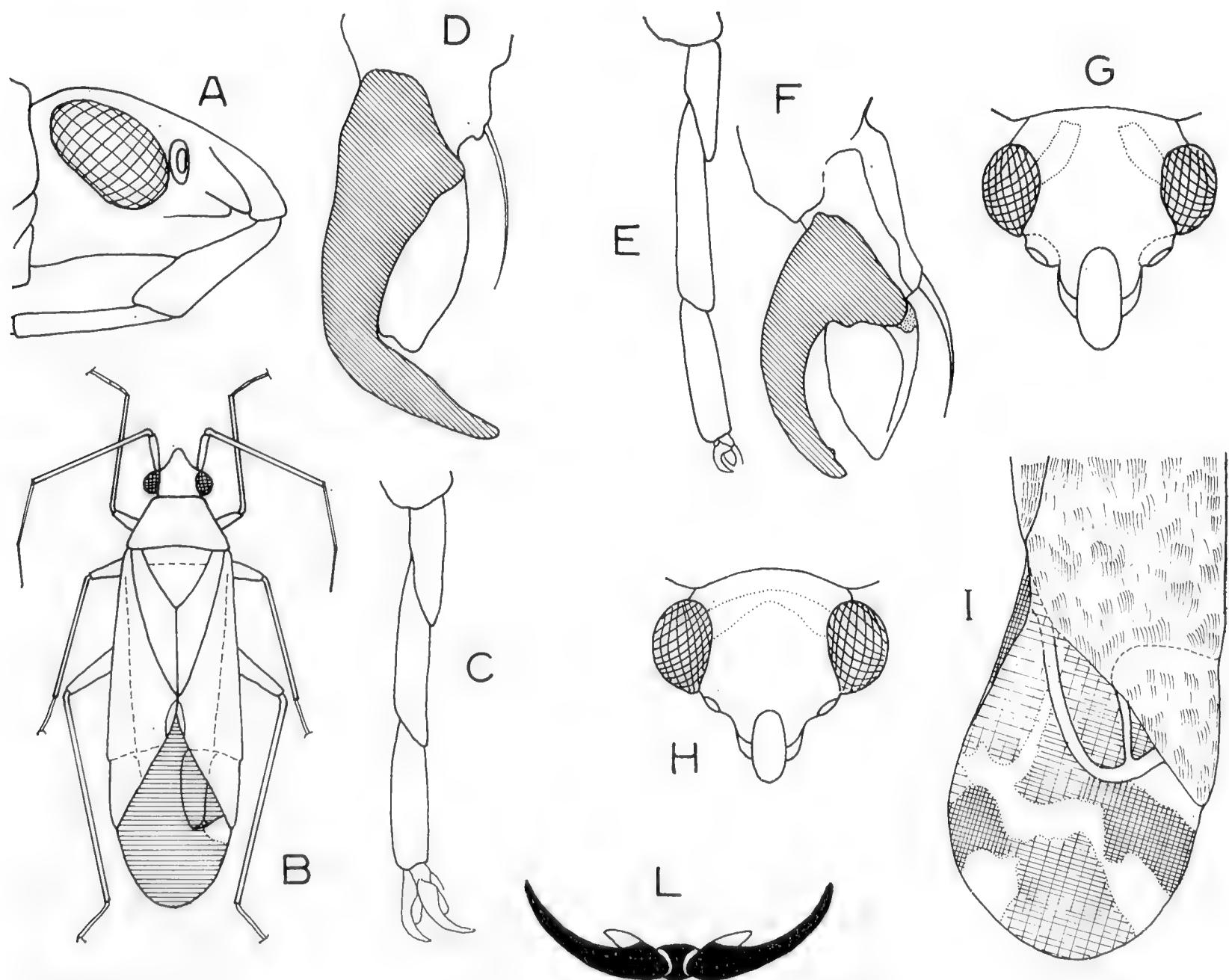


Fig. 20: A, B, C, D, *Phylus coryli*; E, F, G, *Macrotylus quadrilineatus*; H, *Macrotylus herrichi*; I, *Macrotylus paykulli*; L, *Philinae*.

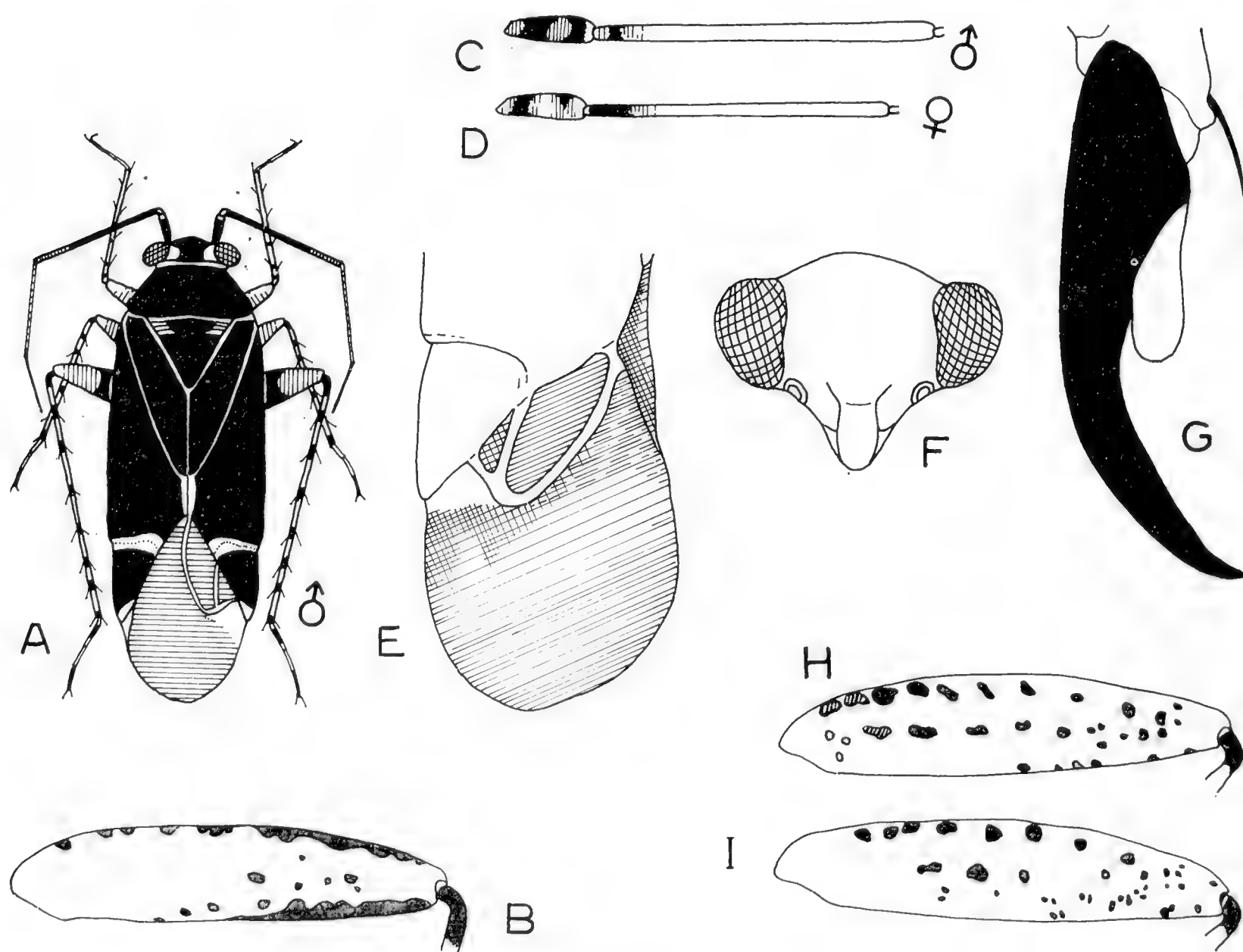


Fig. 21: A, *Plagiognathus albipennis*; B, *Plagiognathus arbustorum*; C, D, E, F, G, H, I, *Plagiognathus chrysanthemi*.

Genere *Chlamydatus* (3 specie)

1. Femori almeno con l'ultimo terzo esterno giallo; spine delle tibie con un anello basale nero, piccolo (Fig. 22 H). Unghie viste di lato: Fig. 22 I. Corpo nero. Lungh. mm 2,3 - 2,8 (Fig. 22 L). *C. pulicarius* (Fall.)
Eurosinibirica; Italia sett., comune nei luoghi soleggati e asciutti con artemisie.
- Femori posteriori completamente neri o solo con la parte estrema gialla (Fig. 22 G); spine delle tibie con un largo anello nero. Corpo nero. Lungh. mm 2,0 - 2,07. *C. pullus* (Reut.)
Euroasiatico - maghrebina; Italia sett., Emilia, Liguria, Umbria, Lazio, in luoghi secchi con achillea, ieracio e trifoglio.

Sottofam. IV. DICYPHINAE (Dicifini; 5 generi, 21 specie)

1. Lati del capo dopo gli occhi paralleli e con una fascia nera. *Macrolophus* Fieb. (4 specie)
— Fascia nera ai lati del capo più stretta degli occhi (Fig. 23 F). Corpo verde chiaro compreso lo scutello. Lungh. mm 3,1 - 3,9. *M. nubilus* (H. S.)
Euroturanico - macaronesio - maghrebina; tutta Italia su *Stachys* e *Pulmonaria*.
- Lati del capo dopo gli occhi con forma e colori diversi. 2
2. Occhi pressoché a contatto con il margine anteriore del pronoto (Fig. 23 E). *Campyloneura* Fieb. (1 specie)
Capo nero con una macchia gialla presso gli occhi. Emielitre in parte trasparenti. Lungh. mm 4,4 - 4,8. *C. virgulata* (H. S.)
Euromediterraneo - macaronesico - canadese; in gran parte delle regioni italiane su diverse latifoglie dove vive di caccia.
- Occhi distanti dal margine anteriore del pronoto (Fig. 23 C). *Dicyphus* Fieb.

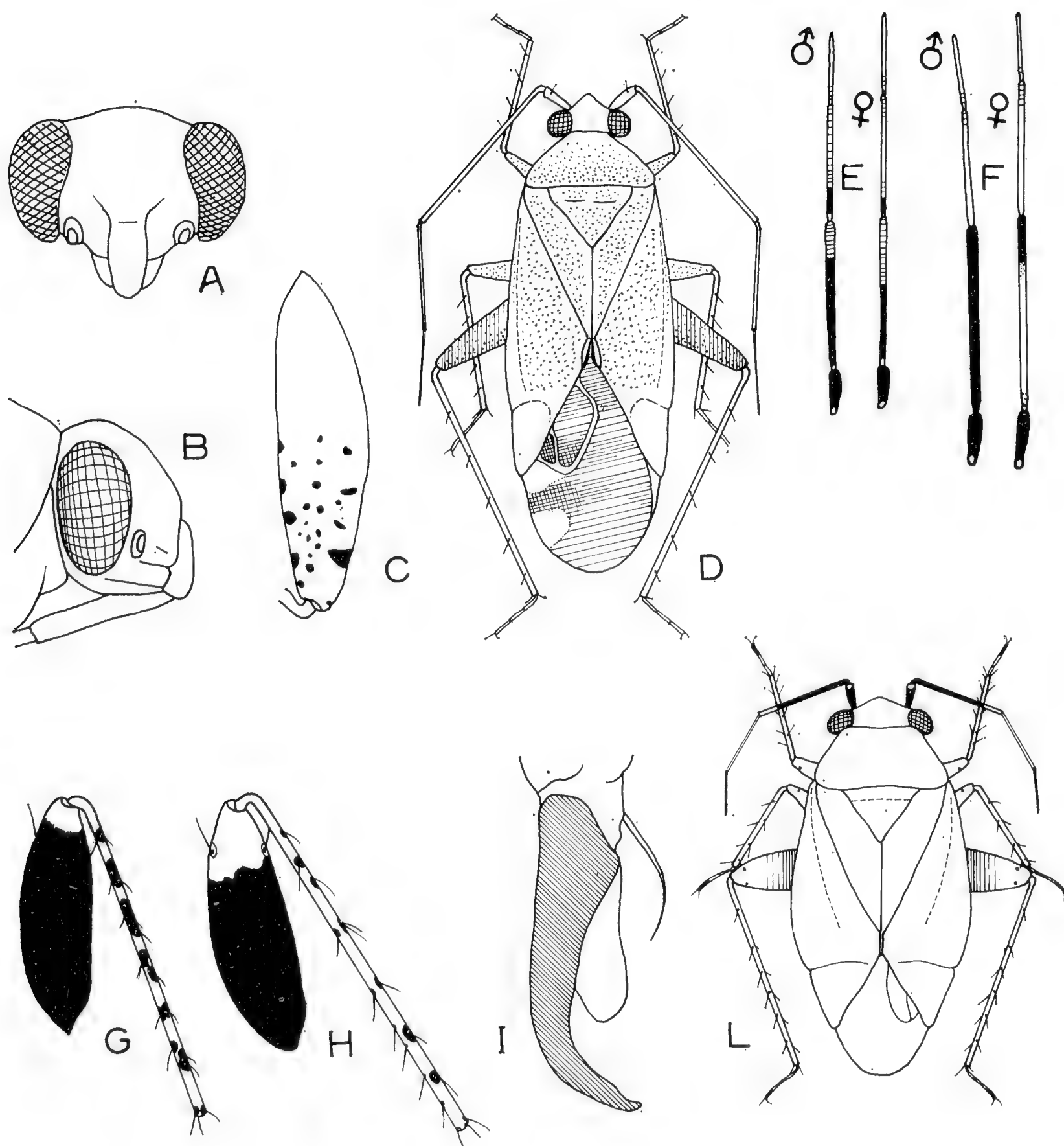


Fig. 22: A, E, *Psallus ancorifer*; B, C, *Psallus alni*; D, *Psallus salicellus*; F, *Psallus ambiguus*; G, *Chlamydatus pullus*; H, I, L, *Chlamydatus pulicarius*.

Genere *Dicyphus* Fieb. (14 specie)

1. Calli anteriori del pronoto grandi, nel mezzo strettamente a contatto (Fig. 23 C). Emielitre trasparenti. Macchie castaneo-rossicce come in Fig. 23 A. Secondo articolo delle antenne 1,4 - 1,8 volte la massima larghezza del pronoto. Lungh. mm 4,4 - 5,2.
D. errans (Wolff)
 Europeo - mediterraneo - anatolica; tutta Italia su piante con peli glandulosi, spesso zoofago.
- Calli anteriori del pronoto piccoli, nel mezzo staccati (Fig. 23 D). Capo nero con 2 macchie bianche. Antenne con il secondo articolo lungo circa 0,66 volte la massima larghezza del pronoto. Emielitre meno trasparenti che nella specie precedente, talvolta completamente grigie. Lungh. mm 3,7 - 4,0.
D. globulifer (Fall.)
 Euromaghrebina (esclusa l'Europa mediterranea). Comune nell'Italia sett. e media su Cariofillacee in luoghi freschi e ombreggiati, zoofago e fitofago.

Sottotam. V. ORTHOTYLINAE (Ortotilini; 24 generi, 88 specie)

1. Tibie posteriori lunghe, leggermente curvate e angolose (Fig. 25 E); capo posteriormente concavo (Fig. 24 F) e con il margine posteriore del vertice acuto e proteso indietro in modo da nascondere il margine anteriore del pronoto (Fig. 24 G). Forma del corpo (Fig. 18 C) e delle unghie (Fig. 16 H). Emielitre con strette fasce trasverse di squame argentee (*Pilophorini*, 1 genere). *Pilophorus* Hahn (v. dopo)
- Tibie posteriori dritte e non angolose (Fig. 26 G). Parte posteriore del capo diritta o convessa, margine posteriore del vertice più arrotondato (Fig. 24 B, 28 B). Forma del corpo diversa (Fig. 24 C, 25 A, B, F, 28 E, F). 2
2. Grossezza del primo articolo del rostro due o più volte maggiore di quella del primo articolo delle antenne (Fig. 25 C, 26 D). Capo fortemente reclinato; distanza tra il margine inferiore dell'occhio e l'estremità del capo nettamente più lunga del maggior diametro dell'occhio (Halticini, 9 generi) (Fig. 26 C, D, 25 C, D). 3
- Primo articolo del rostro più sottile del doppio diametro del primo articolo delle antenne (Fig. 27 A, 24 A). Capo meno reclinato e distanza tra il margine inferiore dell'occhio e l'estremità del capo minore, di rado uguale al maggior diametro dell'occhio (Fig. 24 A, 27 A, 28 D) (*Orthotylini*, 14 generi).
3. Occhi, visti di fianco, con il profilo superiore semicircolare (Fig. 25 C); capo visto anteriormente come in Fig. 25 D. Femmina più sovente brachittera. *Orthocephalus* Fieb. (v. dopo)
- Occhi, visti di fianco, con il profilo superiore conico (Fig. 26 D). 4
4. Antenne sottili, più lunghe del corpo e con il 3° articolo più breve del 4° (Fig. 26 A); femori posteriori molto ingrossati e atti al salto. Predominano le forme brachittere. *Halticus* Hahn (v. dopo)
- Antenne più brevi del corpo e con il 3° articolo più lungo del 4°; femori posteriori normali (Fig. 25 F). *Strongylocoris* Blanch. (v. dopo)
5. Pronoto con una depressione trasversa nella metà anteriore estesa a tutta la larghezza del pronoto (Fig. 28 A - F). *Globiceps* Lep. & Serv. (v. dopo)
- Depressione trasversa del pronoto appena indicata e ristretta alla parte mediana, non raggiunge i margini laterali (Fig. 24 B, C, 27 B). 6
6. Secondo articolo delle antenne molto dilatato e piatto (Fig. 26 F). *Heterotoma* Lep. & Serv. (4 specie)
- Corpo allungato, depresso, fuligineo; zampe giallo-verdi chiare; antenne castaneonere con il terzo articolo più lungo del quarto, primi 2 articoli con densa e lunga peluria (omessa nella figura). *H. planicornis* (Pallas)
- Europea centromeridionale - nordmediterranea; tutta Italia su diverse latifoglie dove ricerca uova di insetti e afidi.
- Secondo articolo delle antenne normale o ingrossato, ma non appiattito. 7
7. Colore dominante verde o verde-giallo chiaro; vertice del capo regolarmente convesso o piano; secondo articolo delle antenne non ingrossato (Fig. 24 C). *Orthotylus* Fieb. (v. dopo)
- Colore dominante nero; vertice del capo con due piccole depressioni in prossimità degli occhi (Fig. 27 B); 2° articolo delle antenne spesso ingrossato (Fig. 27 E - G). *Heterocordylus* Fieb. (v. dopo)

Genere *Pilophorus* Hahn (6 specie, zoofaghe e fitofaghe)

1. Emielitre opache, castanee e coperte da densi peli, lunghi e semieretti; fasce mediane bianche trasverse del corio e del clavo poste sulla stessa linea. Lungh. mm 3,5 - 4,5. *P. confusus* (Kbm.)
- Macaronesico - maghrebino - eurosibirico - turanica; Italia sett. montana, specialmente su alno e salice.
- Emielitre almeno in parte lucenti con peli molto brevi e adagiati. 2
2. Corio, posteriormente alla linea trasversa bianca, lucente e di un castaneo più scuro del resto dell'emielitre (Fig. 24 D). Lungh. mm 4,1 - 5,3. *P. cinnamopterus* (Kbm.)
- Europea tirrenico-settentrionale; Italia sett., centrale e Sardegna, su pini e abeti.
- Porzione posteriore del corio lucente solo nel tratto tra il margine laterale e la vena cubitale. Per altri caratteri vedi Fig. 18 C, 24 E - G. Lungh. mm 4 - 5. *P. clavatus* (L.)
- Eurosibirica - circumtirrenica; Italia sett. e, con minore frequenza, altre regioni, compresa Sicilia e Sardegna, su salicacee.

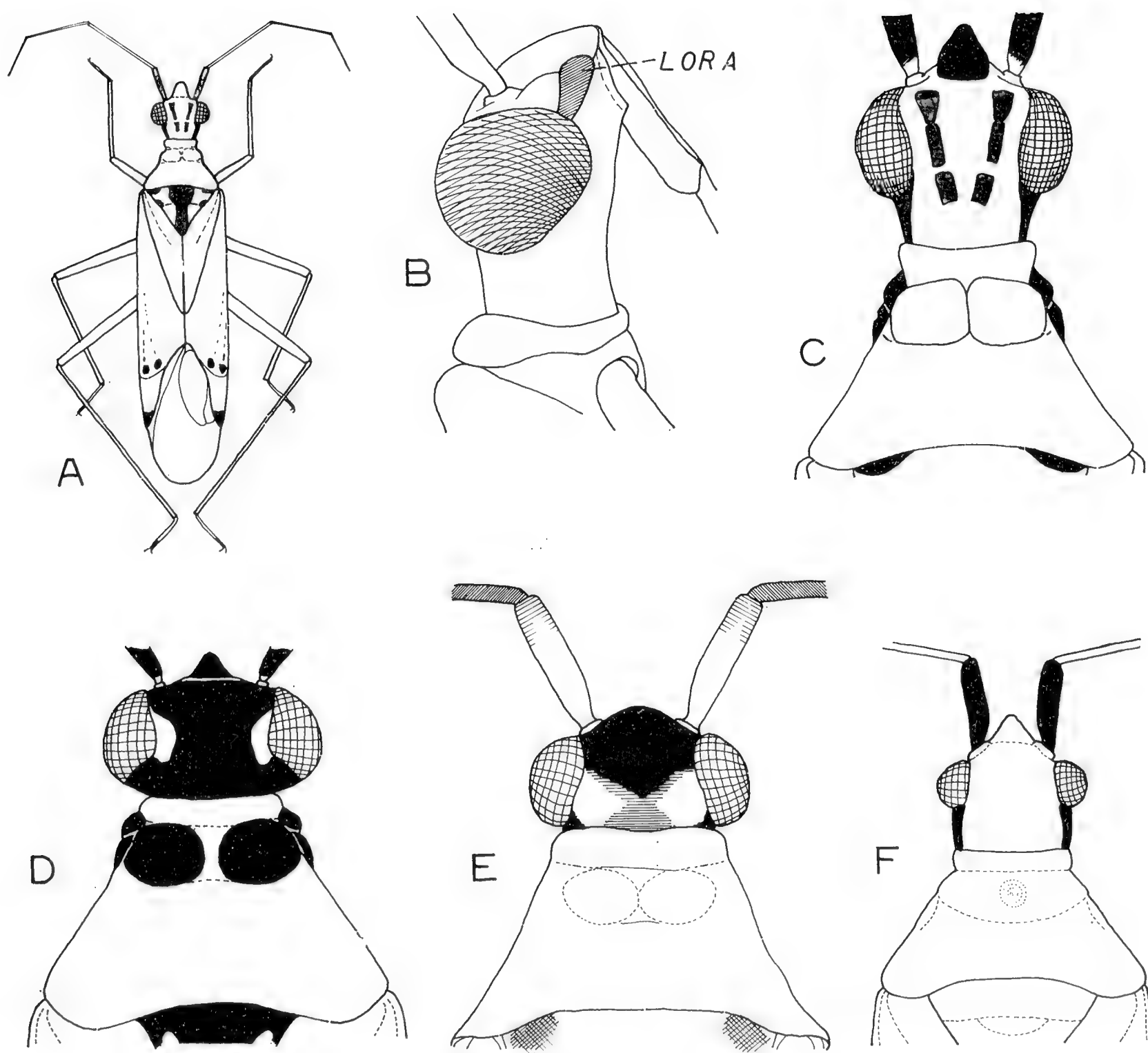


Fig. 23: A, B, C, *Dicyphus errans*; D, *Dicyphus globulifer*; E, *Campyloneura virgulata*; F, *Macrolophus nubilus*.

Genere *Orthocephalus* Fieb. (8 specie)

1. Antenne e zampe completamente nere. Secondo articolo delle antenne lungo il doppio del terzo e nella parte estrema ingrossato. Corpo nero opaco con peluria grigia (Figg. 25 C, D). Lungh. maschi macr. mm 6,5 - 7,8; femmine brach. mm 4,2 - 4,8.
O. brevis (Panz.)

Nordtirrenica - europea orientale - anatolica; Italia nelle zone montane e Sardegna, su campanula.

- Tibie gialle e ai due estremi annerite; antenne nere con il 2° articolo ingrossato e lungo 1,2 (♂) o 1,5 (♀) volte il 3°. Corpo nero, poco lucente, con peli eretti neri e peluria gialla coricata. Lungh. ♂ e ♀ macrotteri mm 4,1 - 5,5; ♀ brachittera mm 3,5 - 4,3. (Figg. 25 A, B).
O. saltator (Hahn)
Eurosibirico - ovestmediterraneo - anatolico - canadese; Italia e Sardegna su ginestra, ieracio e ononis.

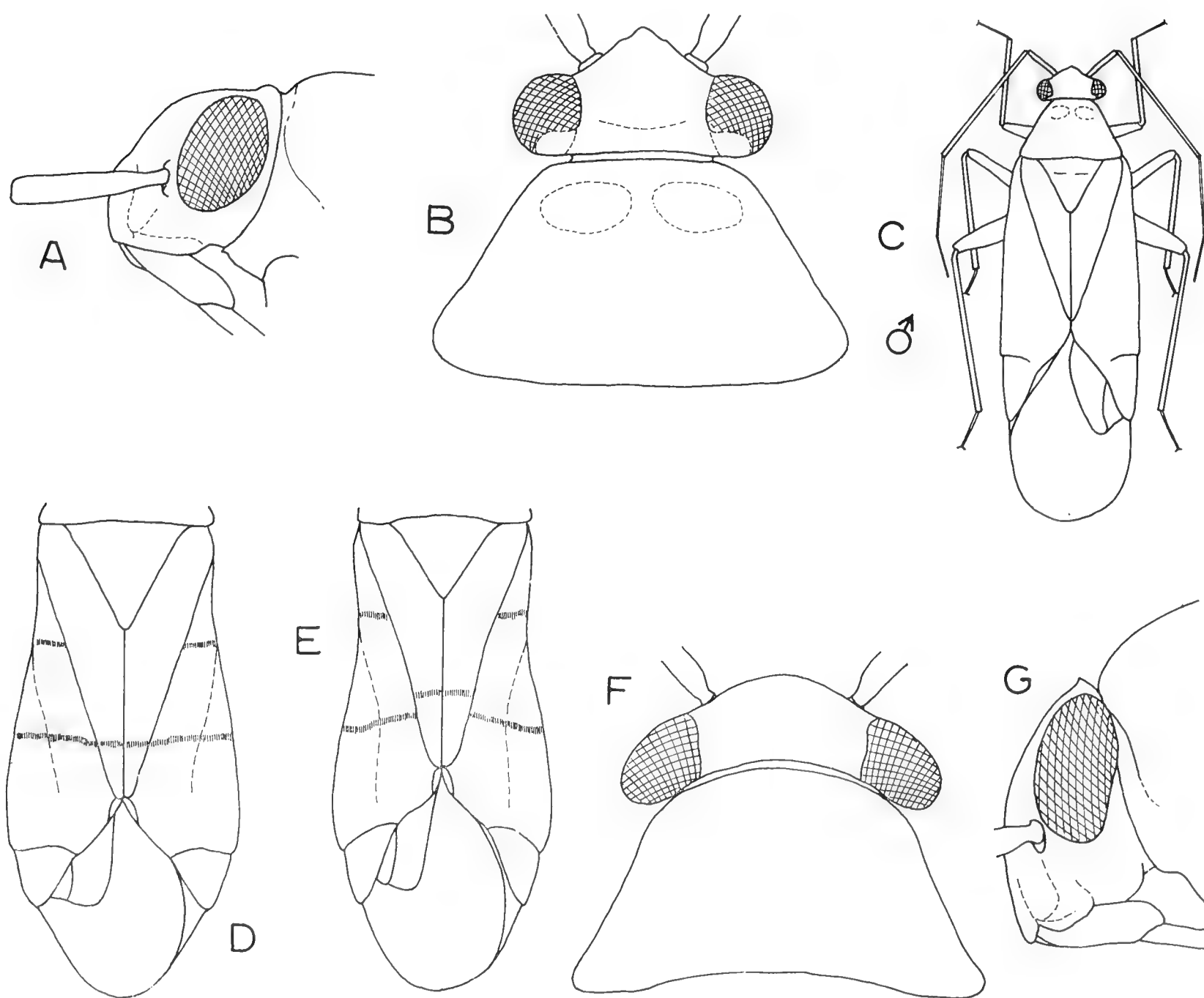


Fig. 24: A, B, C, *Orthotylus marginalis*; D, *Pilophorus cynnamopterus*; E, F, G, *Pilophorus clavatus*.

Genere *Halticus* Hahn (8 specie)

1. Capo (Figg. 26 C, D) e pronoto gialli (di rado quest'ultimo è oscurato). Femori posteriori, almeno nell'ultimo terzo, gialli (Fig. 26 E). Emielitre e corpo nero. Lunghezza mm 2,7 - 3,7.
H. luteicollis (Panz.)
Europa media e meridionale; Italia e Sardegna, su ortiche, clematide e malva.
- Capo nero con due macchie gialle sul vertice presso gli occhi; femori neri con l'estremità gialla (Fig. 26 B); tibie gialle; il resto del corpo nero. Lung. forma macrott. mm 2,8 - 3,4; forma brachitt. mm 2,0 - 2,5.
H. apterus (L.)
Eurosibirico - maghrebino - anatolico - turanica; tutta Italia su diverse erbacee.

Genere *Strongylocoris* Blanch. (6 specie)

1. Scutello nero. Femori giallo-rossi, tibie gialle con brevi spine castanee. Capo rosso, petto rossiccio; il resto del corpo nero. Lung. mm 3,4 - 4,5 (Fig. 25 F).
S. leucocephalus (L.)
Eurosibirico - anatolico - maghrebina; tutta Italia, su diverse latifoglie nelle zone asciutte.
- Scutello rosso. Zampe rosse, tibie con spine nere. Capo rossastro con macchia nera. Margine del pronoto con fine linea gialla. Lati esterni del corio e cuneo con larga fascia arancio; resto del corpo nero. Lung. mm 4,0 - 5,2.
S. erythroleptus Costa
Alpino - appenninica; in gran parte dell'Italia sett. e nel Lazio montano.

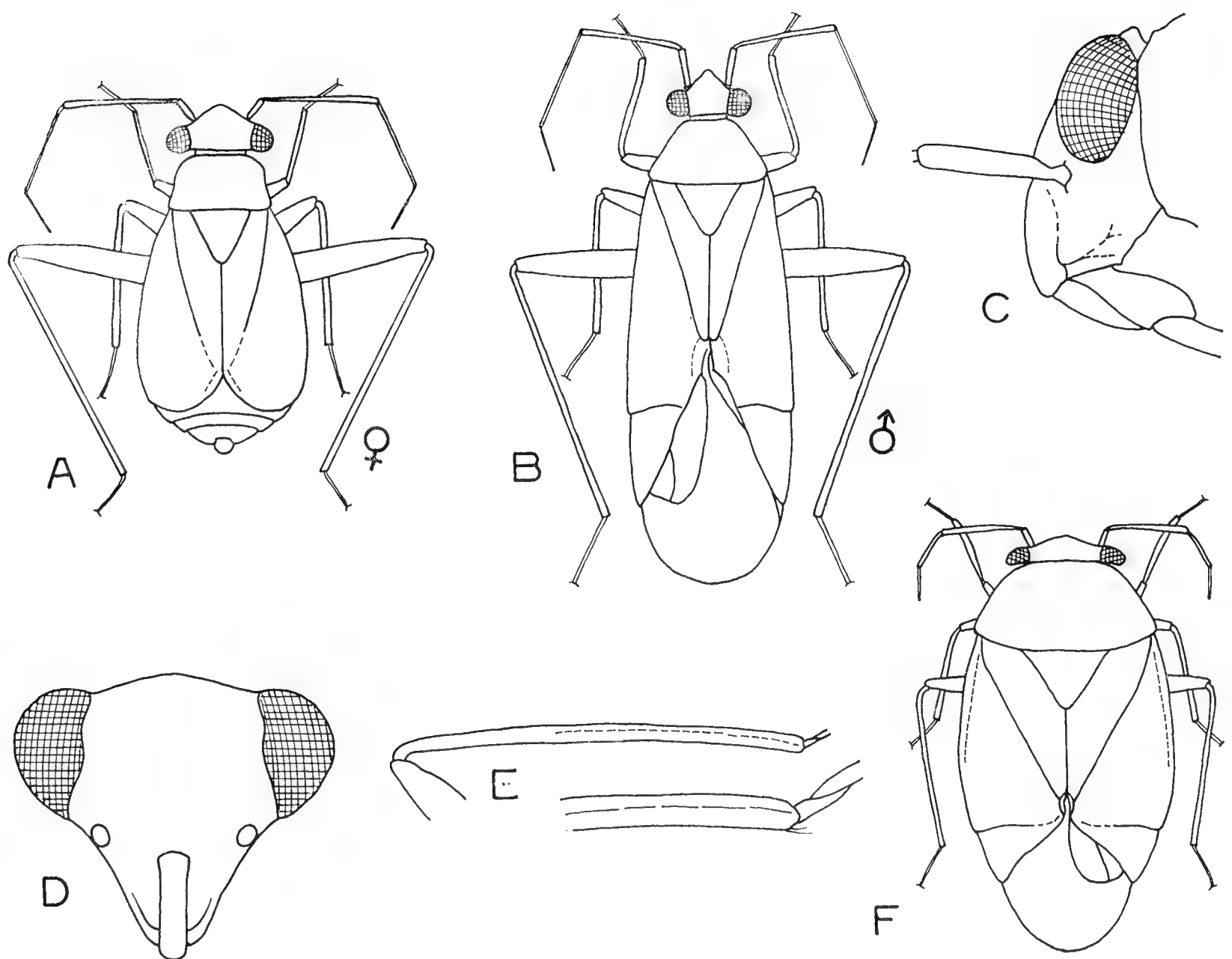


Fig. 25: A, B, *Orthocephalus saltator*; C, D, *Orthocephalus brevis*; E, *Pilophorus clavatus*; F, *Strongylocoris leucocephalus*.

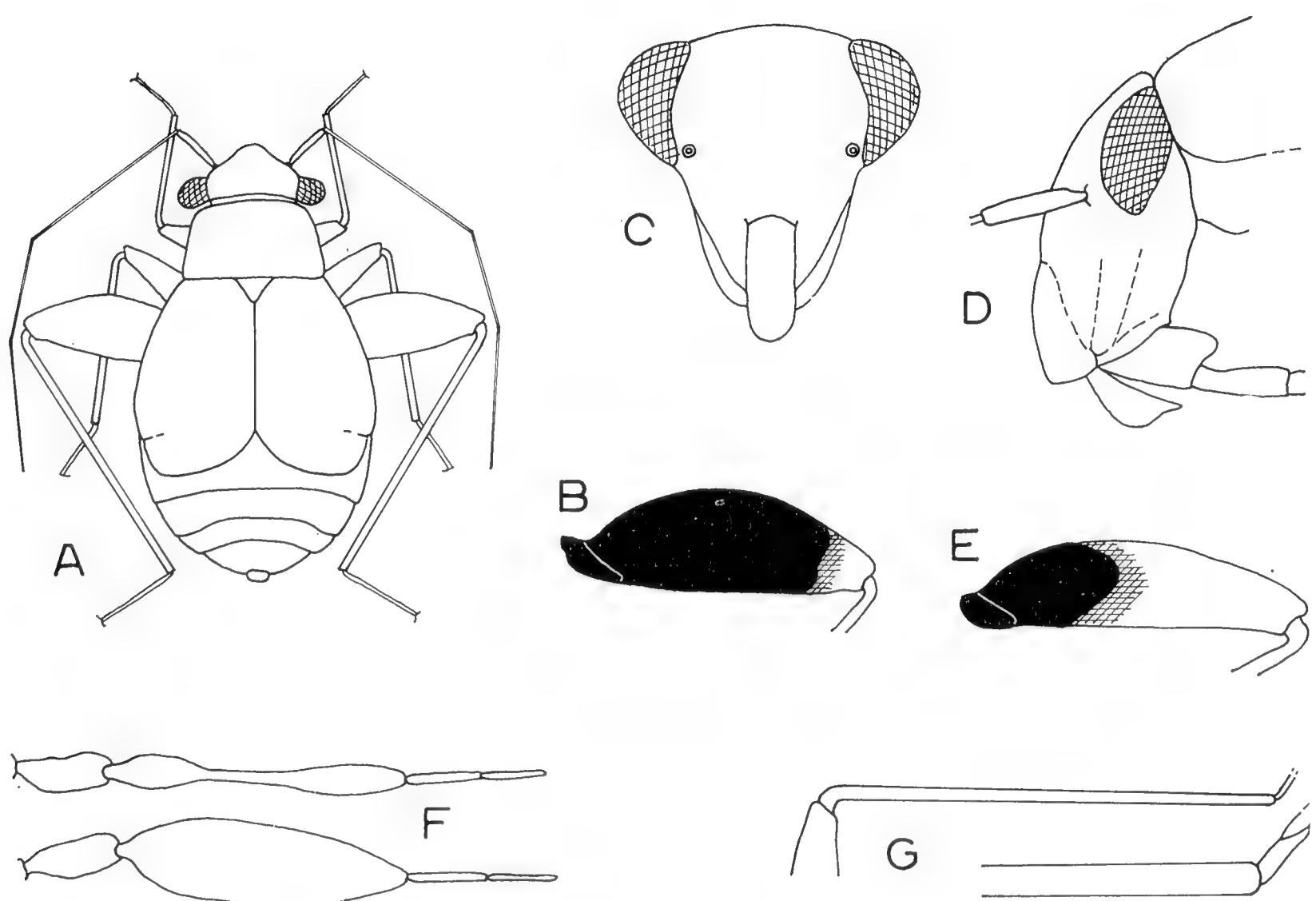


Fig. 26: A, B, *Halticus apterus*; C, D, E, *Halticus luteicollis*; F, *Heterotoma planicornis*; G, *Globiceps cruciatus*.

Genere *Orthotylus* Fieber (17 specie)

1. Regioni superiori con peluria chiara adagiata o semieretta. 2
- Regioni superiori, specie le emielitre, con peli chiari, adagiati ed altri neri o castanei semieretti. 3
2. Emielitre traslucide, bianco-verdi. Vertice del capo con il margine posteriore carenato. Primo articolo delle antenne con una linea nera sulla superficie inferiore; nel maschio l'articolo è lungo quanto la larghezza del capo, nella femmina un poco meno. Venature della membrana verde-chiaro. Lungh. mm 4,6 - 5,1.
O. nassatus (F.)
Euromaghrebino - anatolica; Italia settentrionale e centrale, su alno, faggio, tiglio, salici e querce.
- Emielitre verdi e non traslucide. Vertice carenato (Figg. 24 A, B). Primo articolo delle antenne completamente verde o con tutta la porzione basale oscurata; in ambedue i sessi leggermente più breve della larghezza del capo. Venature della membrana verde-scuro. Corpo verde (Fig. 24 C). Lungh. mm 5,8 - 7,0.
O. marginalis (Reut.)
Euroanatolico - sibirica - maghrebina; Italia montana, fitofago, ma pure cacciatore di afidi e psillidi.
3. Membrana grigia con le celle verdi. Rostro proteso fino alle coxe medie. Capo verde-chiaro. Antenne verdi. Tibie posteriori 4 volte i tarsi e con deboli spine. Lunghezza mm 3,5 - 4,2.
O. flavosparsus (Sahlb.)
Eurosibirico - ovestmediterraneo - anatolico - turanica, neartica; Italia e isole su chenopodiacee, menta e veronica.
- Membrana completamente grigio-scuro. Rostro proteso fino alle coxe anteriori. Capo grigio-scuro. Antenne verdi con il 3° e 4° articolo, almeno in parte, nerici. Tibie posteriori lunghe quattro volte i tarsi e con spine nere. Lungh. mm 3,8 - 4,9.
O. virescens (Dgl. Sc.)
Europeo - maghrebino - estmediterraneo - canadese; Italia montana su ginestra e citiso.

Genere *Heterocordylus* Fieber (8 specie)

1. Pronoto con i lati leggermente concavi (Fig. 27 B). Corpo nero opaco; due ultimi articoli delle antenne ed estremità dei femori rosso-castanei. Antenne con il 2° articolo ingrossato in ambedue i sessi (Fig. 27 G). Lungh. mm 4,3 - 4,8.
H. tumidicornis (H. S.)
Europeo - centromeridionale; Italia, sul pruno e sull'alno, più zoofago che fitofago.
- Pronoto con i lati diritti (Figg. 27 C, D). Zampe e antenne nero opache come il resto del corpo. 2
2. Antenne in ambedue i sessi con il 2° articolo non ingrossato (Fig. 27 F); 4° articolo circa 0,6 volte il 3° articolo. Pronoto (Fig. 27 D). Lungh. mm 3,8 - 5,0.
H. leptocerus (Kirsch.)
Medioeuropeo - pontico - nordtirrenica; Italia settentrionale, centrale e Sardegna su ginestra, citiso e pruno.
- Antenne con il 2° articolo ingrossato solo nella femmina (Fig. 27 E); 4° articolo circa 0,8 volte il 3°. Pronoto (Fig. 27 C). Lungh. mm 4,0 - 4,8.
H. genistae (Scop.)
Europeo - centromeridionale - nordtirrenica; Italia in diverse regioni e in Sardegna, fitofago e zoofago, su ginestra e citiso.

Genere *Globiceps* Lep. & Serv. (5 specie)

1. Emielitre nere con fascia mediana trasversa di squame bianco-argenteo. Calli anteriori del pronoto sporgenti in una apofisi cuneiforme (Fig. 28 A). Corpo nero opaco; solo il primo articolo delle antenne è giallo-rossiccio. Lungh. mm 4,9 - 5,8.
G. sphegiformis (Rossi)
Medioeuropeo - nordmediterraneo - maghrebina; tutta Italia e isole, su quercia, acero, faggio e pino.

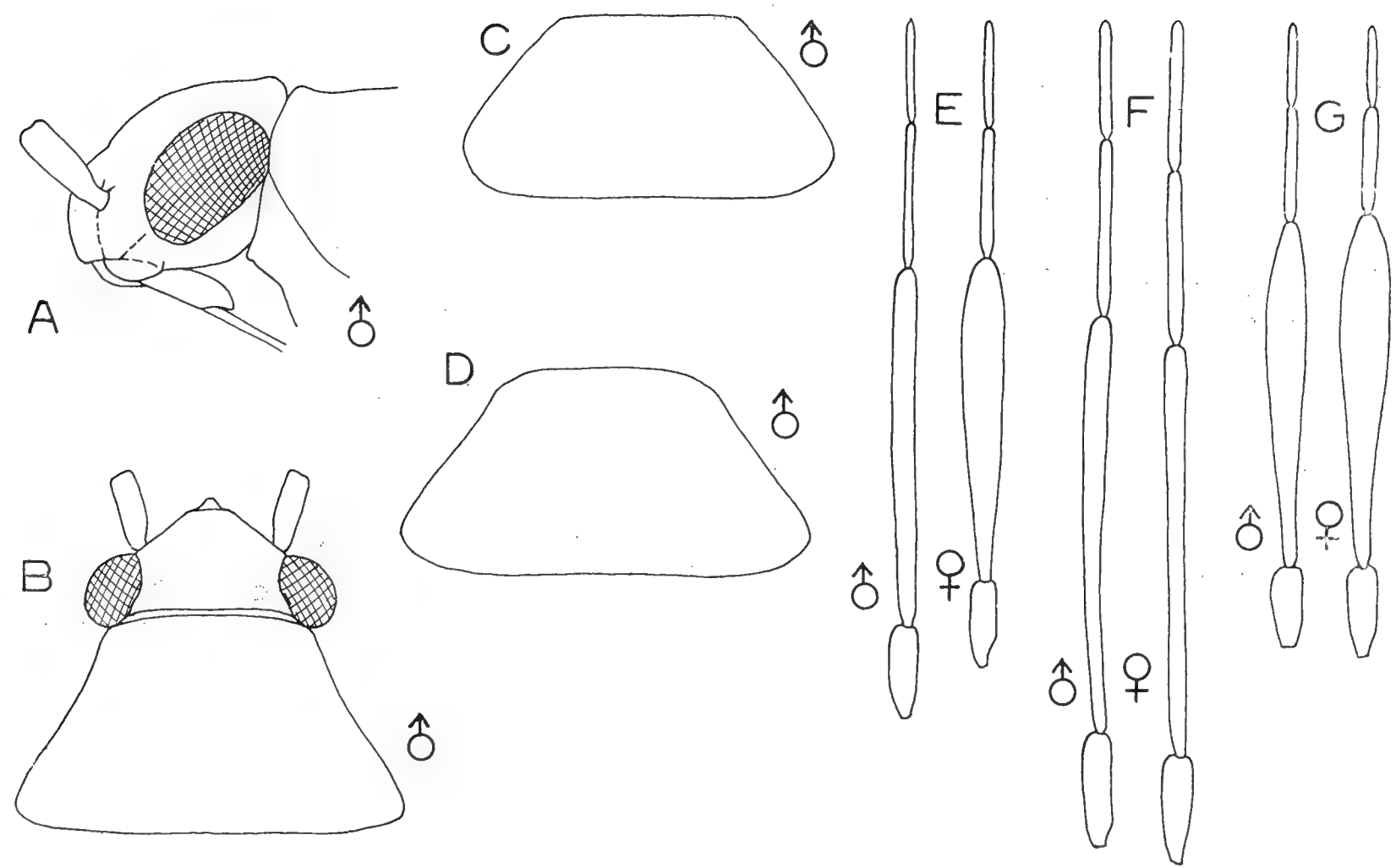


Fig. 27: A, B, G, *Heterocordylus tumidicornis*; C, E, *Heterocordylus genistae*; D, *Heterocordylus leptocerus*.

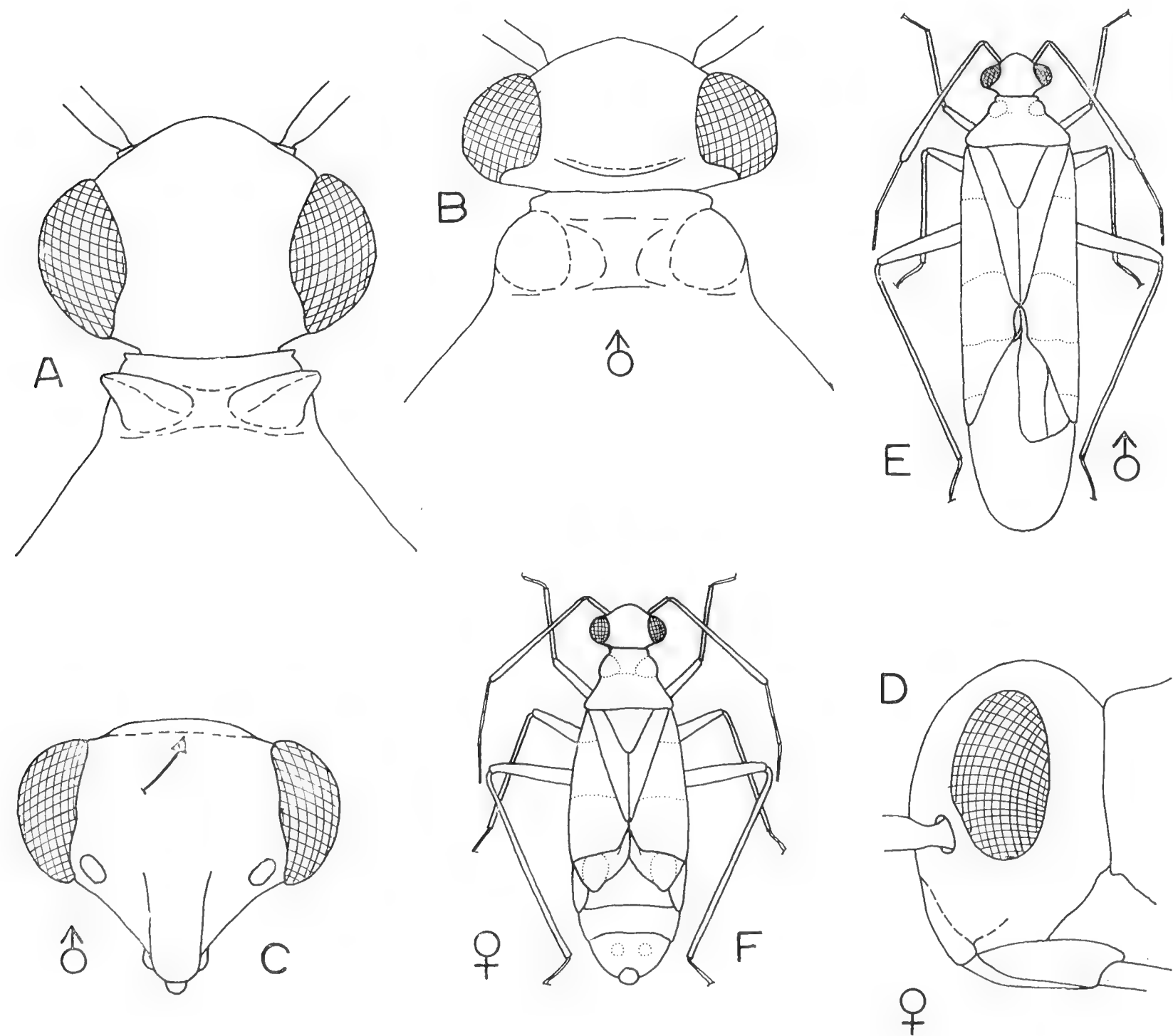


Fig. 28: A, *Glopiceps sphegiformis*; B, C, D, E, F, *Globiceps cruciatus*.

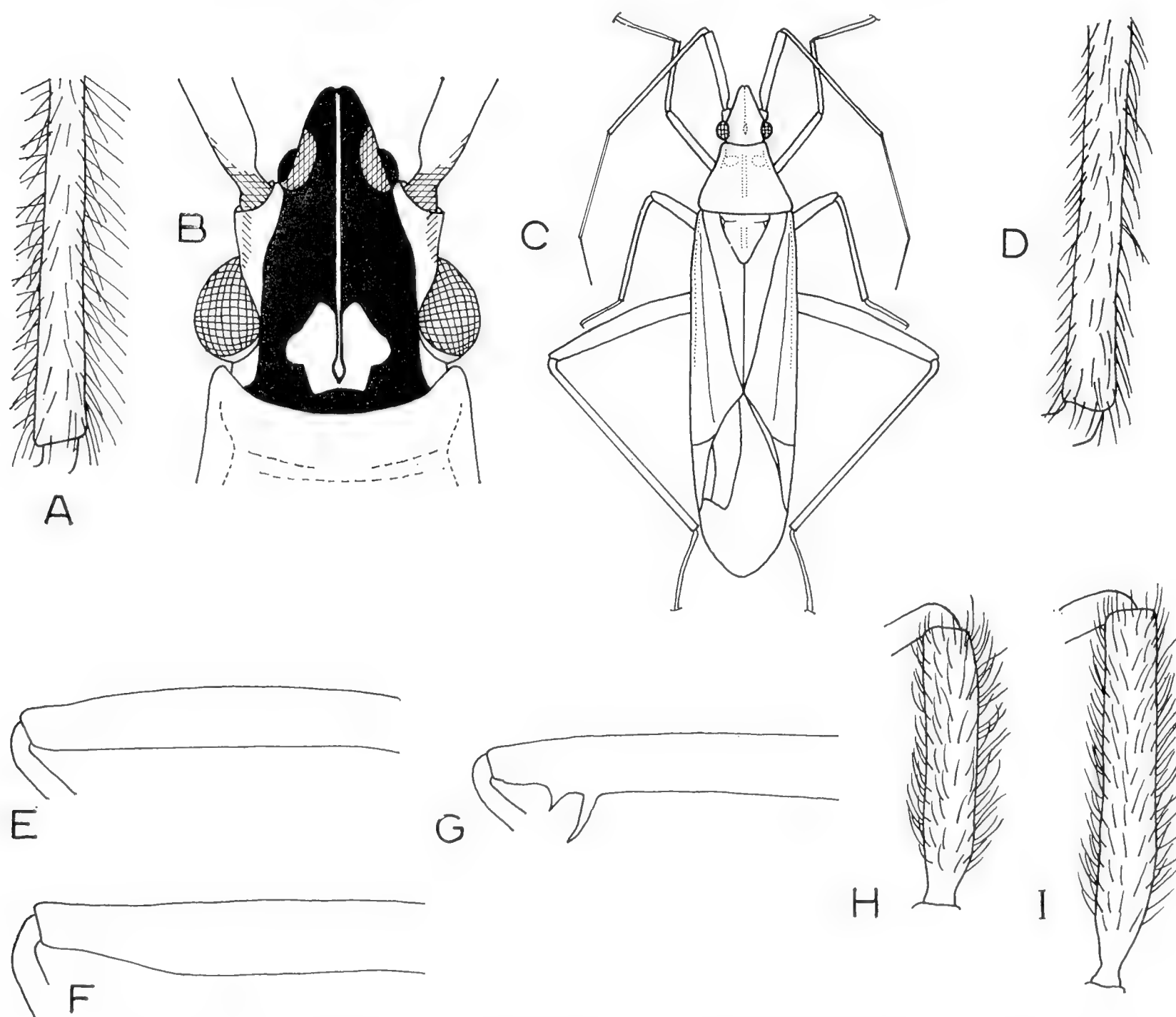


Fig. 29: A, B, C, *Notostira erratica*; D, *Megaloceroea linearis*; E, *Stenodema holsatum*; F, *Stenodema virens*; G, *Stenodema calcaratum*; H, *Stenodema virens*; I, *Stenodema laevigatus*.

- Emielitre castaneo-nere con larga fascia gialla mediana e gran parte del cuneo pure chiaro. Calli anteriori del pronoto arrotondati (Fig. 28 B). Corpo nero, zampe rossiccio-castanee. Maschio con la carena posteriore del vertice arcuata (Fig. 28 B); capo, visto anteriormente, fra gli occhi diritto (non si tenga conto della carena post. che appare nel profilo) (Fig. 28 C); emielitre regolarmente sviluppate. Femmina con il capo visto di lato come in Fig. 28 D; rostro proteso oltre le coxe medie; emielitre abbreviate (Fig. 28 F). Lungh.: maschio mm 5,5-6,0, femmina mm 4,6-5,0.

G. cruciatus Reut.

Europeo - ovestmediterraneo - anatolico - turanica; Italia e isole nei luoghi soleggianti e asciutti, su diverse erbacee, occasionalmente attacca afidi e uova di insetti.

Sottofam. VI. MIRINAE (Mirini; 35 generi, 142 specie)

Tabella delle tribù

1. Pronoto privo anteriormente di collare (Fig. 16 I). Vedi anche n. 1 della tabella generale dei *Miridae*. *Stenodemini* (v. dopo)
- Pronoto provvisto anteriormente di un distinto collare (Fig. 16 A). 2
2. Guance alte pressoché quanto l'occhio e questo con il margine inferiore assai distante dalla gola (la distanza è sempre maggiore della metà del diametro dell'occhio) (Fig. 18 D). Occhi posti nell'angolo superiore del capo (Fig. 36 G). *Capsodini*: gen. *Capsodes* Dhlb. (v. dopo)
- Guance assai meno alte del maggior diametro dell'occhio e questo molto avvicinato alla gola (Fig. 16 A, B). L'occhio, visto anteriormente, occupa la porzione mediana del capo. *Mirini* (v. dopo)

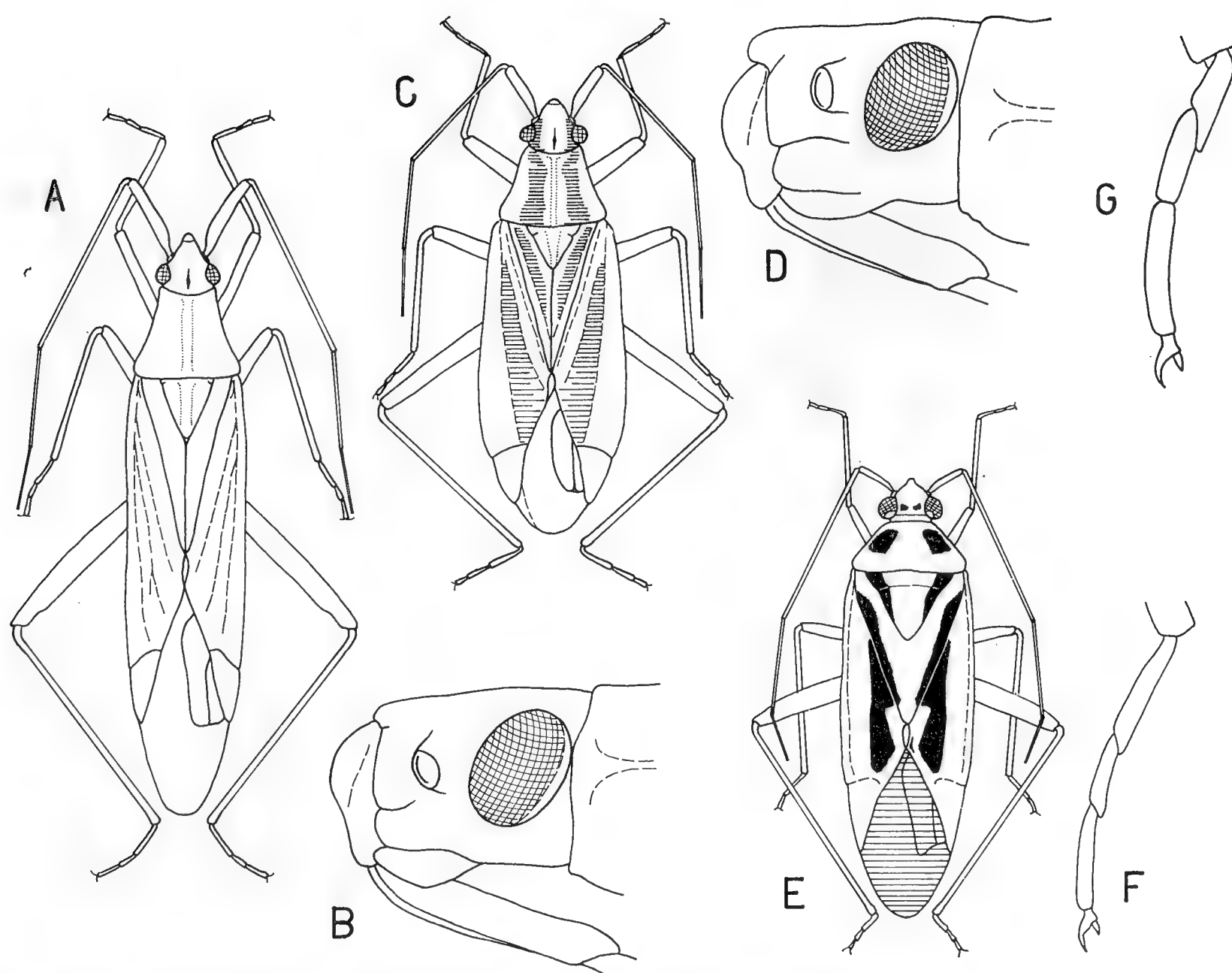


Fig. 30: A, B, *Stenodema laevigatum*; C, *Stenodema holsatum*; D, *Stenodema virens*; E, F, *Stenodema binotatus*; G, *Charagochylus*.

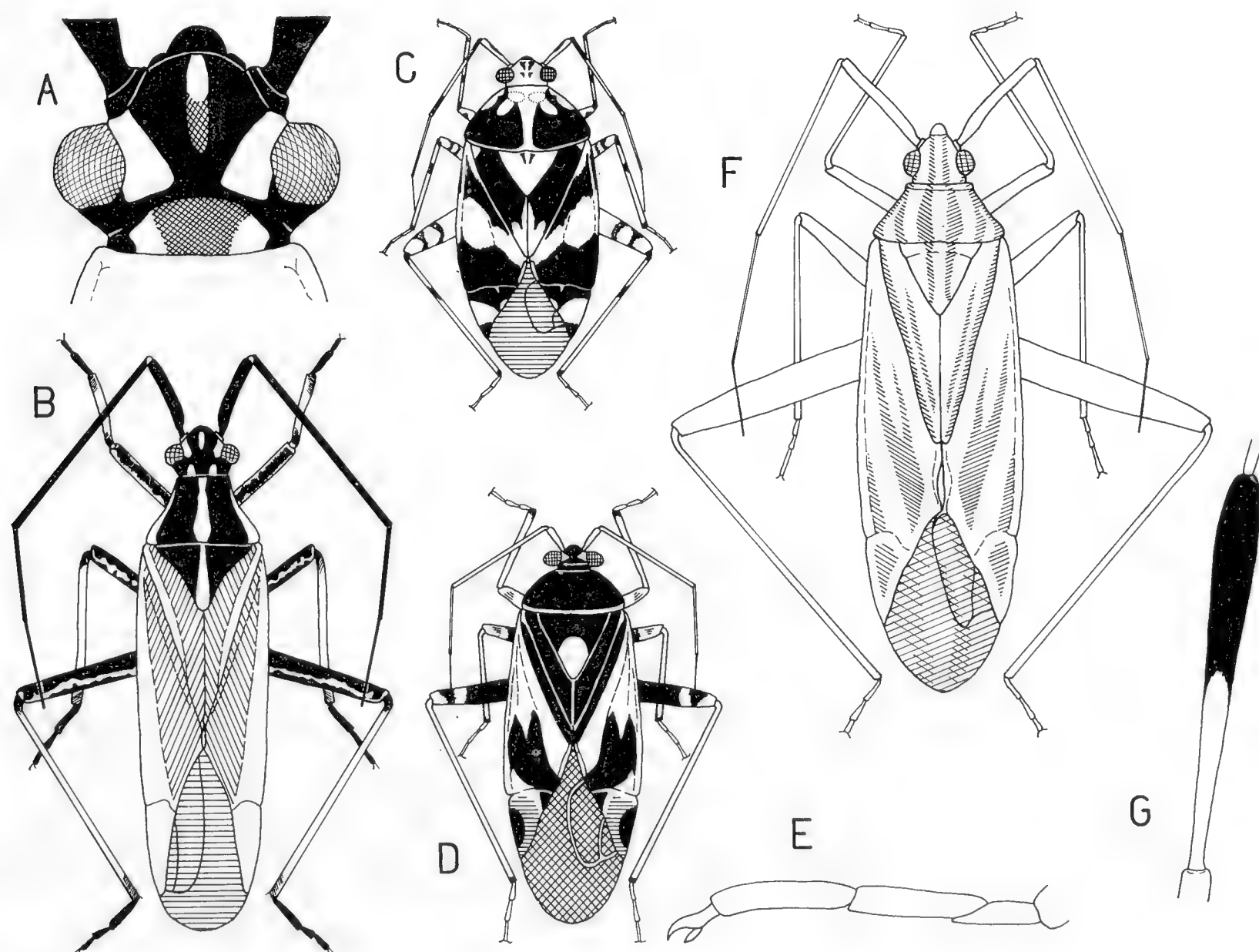


Fig. 31: A, B, *Leptoterna dolobrata*; C, *Liocoris tripustulatus*; D, E, *Polymerus unifasciatus*; F, *Miridius quadrivirgatus*; G, *Capsus ater*.

Tribù *Stenodemini*

Comuni sulle graminacee per cui riescono talvolta dannosi ai cereali, specialmente al frumento.

1. Scutello punteggiato. *Stenodema* Lap. (v. dopo) 2
— Scutello liscio, senza distinta punteggiatura.
2. Capo lungo quanto largo o più lungo; occhi a contatto con il margine anteriore del pronoto (Fig. 29 B). 3
— Capo più largo che lungo e con gli occhi distanti dal margine anteriore del pronoto (Fig. 30 A). *Leptoterna* Fieb. (3 specie)
— Corpo verde, emielitre spesso arancio chiaro e nel maschio rossicce; capo e pronoto con grandi disegni neri (Fig. 30 B). Maschio macrottero, femmina dimorfa. Membrana delle emielitre della forma brachittera con una sola cella. Lungh. mm 7-9. *L. dolobrata* (L.)
Euroibirico - anatolico - sonora; diffusa in tutta l'Italia montana.
3. Tibie posteriori prive di spine, con peluria lunga, che sul lato interno è circa quanto il diametro della tibia (Fig. 29 A). *Notostira* Fieb. (1 specie)
— Corpo giallo verde o rosa giallo; femmina con colorazione chiara sia sotto che sopra (Fig. 29 C); maschio con le parti superiori con fasce longitudinali nerice e regioni inferiori nere almeno nella parte mediana. Lungh. mm 6,2-8,7. *N. erratica* (L.)
Europea; in Italia solo nelle regioni montane oltre i 200 metri di quota, in luoghi asciutti.
— Tibie posteriori con spine e tutta la peluria più breve (Fig. 29 D). *Megaloceroea* Fieb. (1 specie)
Corpo lungo, parallelo, giallo verde, privo di peli, eccetto le zampe e le antenne; femori e tibie molto lunghe e cilindriche. Lungh. mm 8-10. *M. linearis* (Füss.)
Europea centromeridionale ovestmediterraneo - anatolica; in tutta Italia ed isole, specie sui cereali delle zone montane.

Genere *Stenodema* (6 specie)

In tutte le specie è dominante il colore verde; vi sono forme con fasce longitudinali castanee dal capo alle emielitre, e nei maschi tali fasce sono più oscure che nelle femmine.

1. Femori posteriori con due robuste spine sul lato interno (Fig. 29 G). Capo e pronoto (Fig. 16 I). Lungh. mm 6,7-8,0. *S. calcaratum* (Fall.)
Euroasiatico - ovestmediterranea; comune nelle zone umide di tutta Italia e isole. 2
— Femori posteriori completamente inermi (Fig. 29 E, F, 30 A, C).
2. Femori posteriori, nella parte distale, ristretti repentinamente (Fig. 29 F). Solo la forma macrottera. 3
— Femori posteriori assottigliati gradatamente (Fig. 29 E). Primo articolo delle antenne lungo quanto la larghezza del capo e con peluria lunga e fitta. Spesso con emielitre abbreviate (Fig. 30 C). Lungh. mm 5,5-7,5. *S. holsatum* (F.)
Euroibirico - ovestmediterranea; nelle zone montane di tutta Italia e Sardegna.
3. Capo con la fronte protesa sopra il clipeo (Fig. 30 D). Primo articolo delle antenne (Fig. 29 H). Lungh. mm 7,0-8,5. *S. virens* (L.)
Euroibirico - anatolico - ovestmediterranea; diffusa nelle Alpi e nelle zone montane della penisola.
— Capo con la fronte degradante sul clipeo senza formare un gradino (Fig. 30 A, B). Primo articolo delle antenne più lungo (Fig. 29 I). Lungh. mm 7,8-9,0. *S. laevigatum* (L.)
Oloartica: tutta Italia.

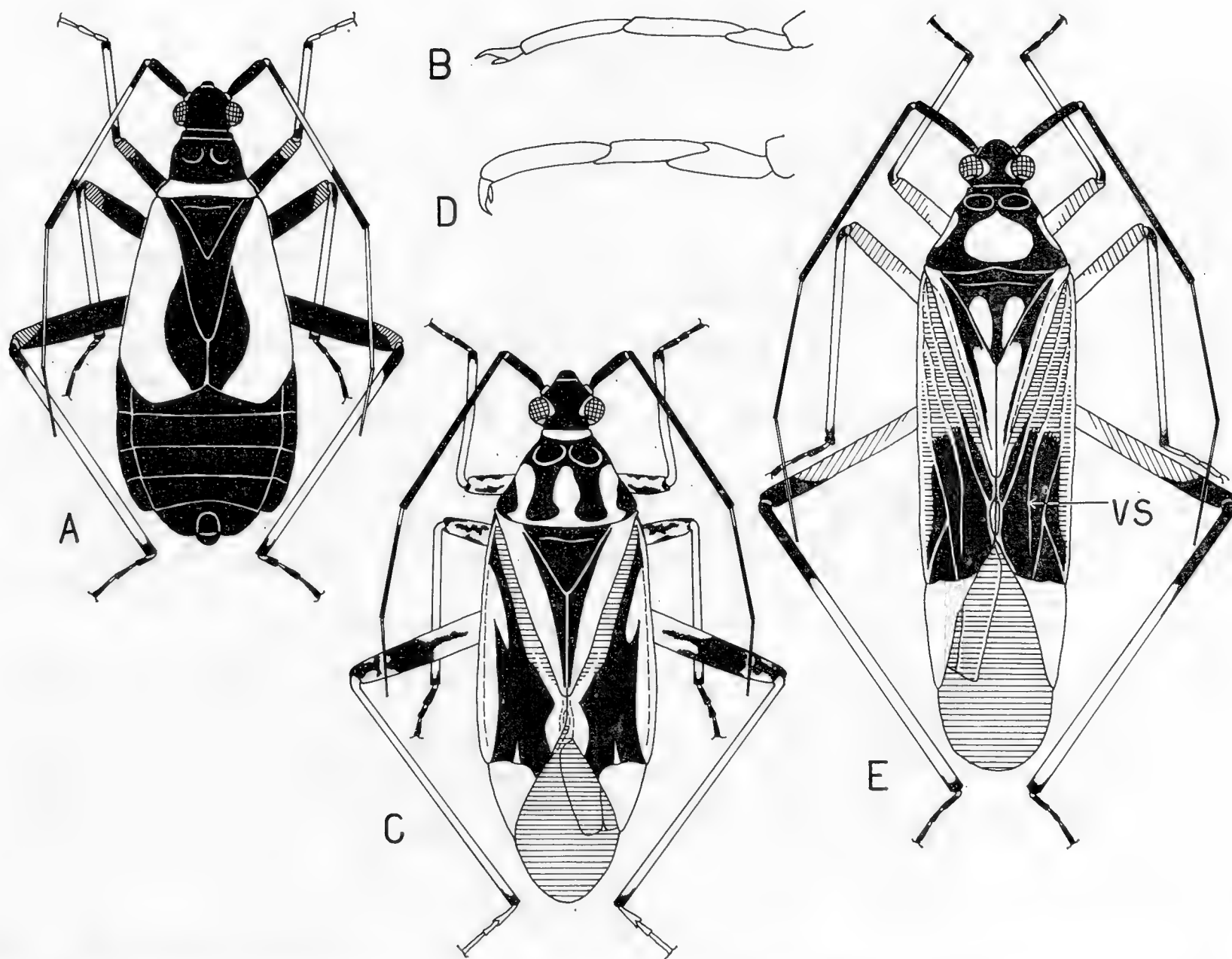


Fig. 32: A, B, *Alloeonotus egregius*; C, *Hadrodemus mflavum*; D, E, *Miris striatus*.

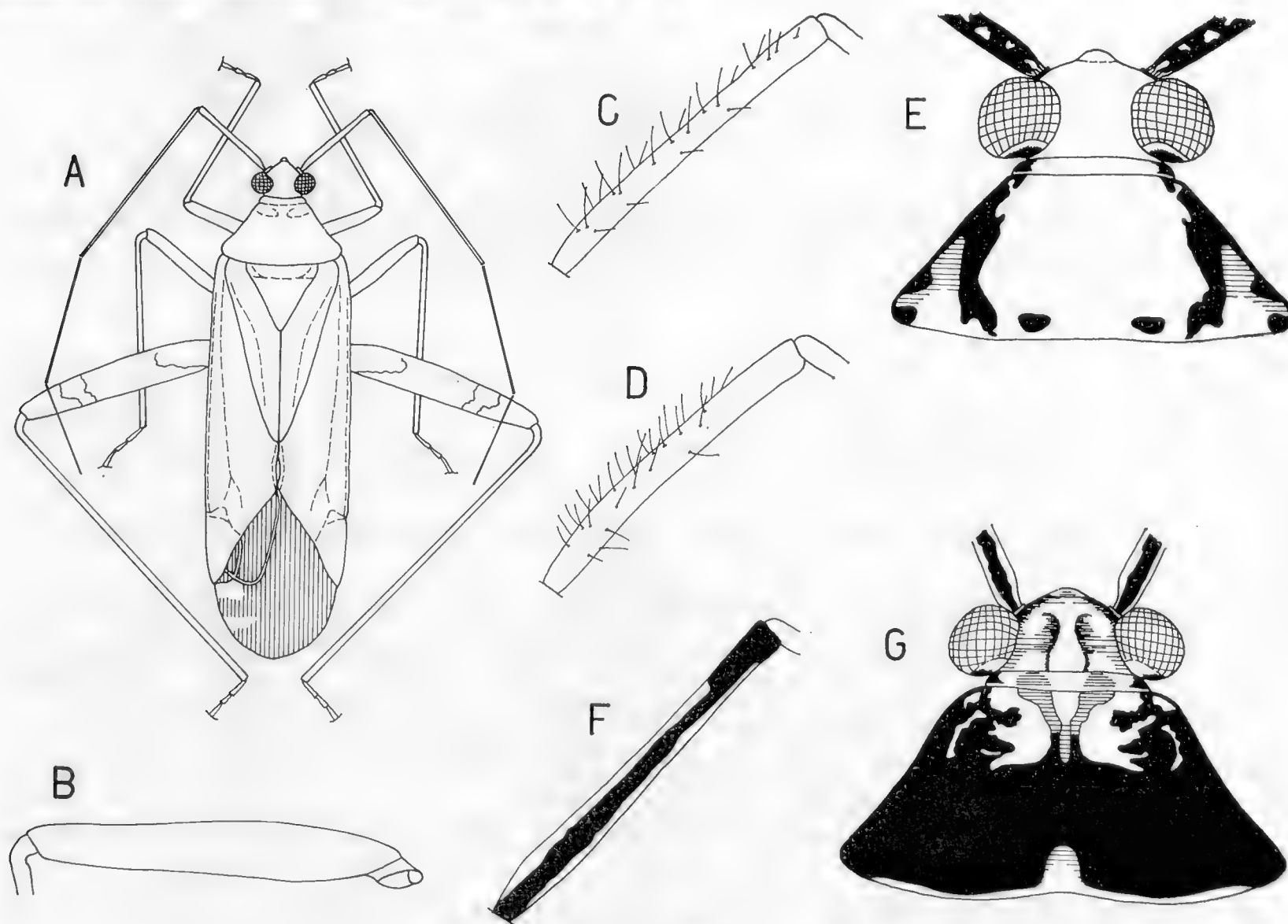


Fig. 33: A, B, C, *Phytocoris ulmi*; D, *Phytocoris varipes*; E, *Phytocoris tiliae*; F, G, *Phytocoris populi*.

Tribù *Mirini*

1. Pronoto ed emielitre lisce, non punteggiate, vertice del capo privo di carena trasversa (Sottotribù *Miraria*). 2
- Pronoto ed emielitre distintamente punteggiate. Se la punteggiatura è poco distinta il vertice del capo presenta una distinta carena trasversa (Sottotribù *Capsaria*). 9
2. Femori posteriori dal quarto basale all'estremità gradatamente assottigliati (Figg. 33 A, B), leggermente appiattiti e lunghi quanto l'addome. 3
- Femori posteriori pressoché cilindrici, non appiattiti e più brevi dell'addome. 4
3. Margine laterale del pronoto, anteriormente, orlato ed acuto. *Miridius* Fieb. (2 specie)
Giallo ocraceo con fasce longitudinali testacee (Fig. 31 F). Lungh. mm 8,8 - 10,0.
M. quadrivirgatus (Costa)
Atlantico - mediterranea; su diverse graminacee in quasi tutte le regioni italiane, in Sicilia e Sardegna.
- Margine laterale del pronoto arrotondato e privo di orlature *Phytocoris* Fall. (v. dopo)
4. Primo articolo dei tarsi posteriori lungo circa 2 volte il secondo, ma con uguale grossezza (Fig. 30 F). *Stenotus* Jakz. (1 specie)
Corpo giallo-verde; pronoto con due punti neri ed elitre con bande nere, nel maschio molto più estese che nella femmina (Fig. 30 E). Lungh. mm 5,8 - 7,2.
S. binotatus (F.)
Euroanatolico - circumtirrenica, neartica; comune nei boschi radi di latifoglie di tutta Italia.
- Primo articolo dei tarsi posteriori con altri caratteri. 5
5. Emielitra con una vena supplementare fra la brachiale e la cubitale (Fig. 32 E, VS).
Miris F. (1 specie)
Corpo nero con fasce longitudinali gialle molto variabili (Fig. 32 E). Lungh. mm 8,5 - 11.
M. striatus (L.)
Euroanatolico - circumtirrenica; su diverse latifoglie in tutta Italia e Sicilia, attacca coccidi e uova d'insetti.
- Emielitre senza la vena supplementare (Fig. 17 B) e pure le altre possono mancare. 6
6. Orlo anteriore del pronoto più sottile del secondo articolo delle antenne alla base; secondo e terzo articolo con grossezza pressoché uguale. Cella maggiore della membrana arrotondata all'estremità. *Adelphocoris* Reut. (v. dopo)
- Orlo anteriore del pronoto più largo del diametro del secondo articolo delle antenne. Terzo articolo delle antenne distintamente più sottile del secondo. 7
7. Secondo articolo dei tarsi lungo circa due volte il primo (Fig. 32 B). Emielitre della femmina sovente raccorciate. *Alloeonotus* Fieb. (2 specie)
Corpo parallelo, nero, con due larghe fasce gialle sulle emielitre ed una sottile alla base del pronoto (Fig. 32 A, ♀). Lungh. mm 6,2 - 8,3. *A. egregius* Fieb.
Sudeuropea orientale - anatolica; Italia sett. montana su querce e altre latifoglie.
- Secondo articolo dei tarsi più breve del primo o solo leggermente più lungo (Figg. 34 A, B). 8
8. Pronoto nero con tre linee gialle longitudinali. *Hadrodemus* Fieb. (1 specie)
Corpo nero, inferiormente con macchie chiare e sulle emielitre con quattro fasce gialle formanti una M (Fig. 32 C). Lungh. mm 6,6 - 8,0. *H. mflavum* (Gz.)
Sudeuropea orientale - anatolica; Italia sett. montana su querce e altre latifoglie, salvia, medica e altre erbe in luoghi soleggati.
- Pronoto concolore o con altri disegni. *Calocoris* Fieb. (v. dopo)
9. Vertice del capo privo di carena basale trasversa o solo indicata ai lati. Corpo mai completamente verde. 10
- Vertice del capo con una carena basale completa, se questa è interrotta nel mezzo il corpo è completamente verde. 11
10. Emielitre completamente nere. *Capsus* F. (1 specie)
Corpo nero, opaco, con peluria lucente. Capo, pronoto, antenne e zampe neri o gialli o di ambedue i colori. Secondo articolo delle antenne Fig. 31 G. Lungh. mm 5,4 - 6,3. *C. ater* (L.)
Eurosibirico - anatolica - ovestmediterranea, neartica; comune in tutta Italia ed isole, in luoghi asciutti.
- Emielitre, almeno in parte, con disegni chiari. *Liocoris* Fieb. (1 specie)
Corpo liscio, lucente, fuligineo; capo, pronoto ed emielitre giallo-verdi o gialli con disegni castanei o neri variabili (Fig. 31 C). Lungh. mm 3,8 - 5,0. *L. tripustulatus* (F.)
Eurosibirico - mediterraneo - turanica; comune in tutta Italia e isole, su ortica e parietaria.

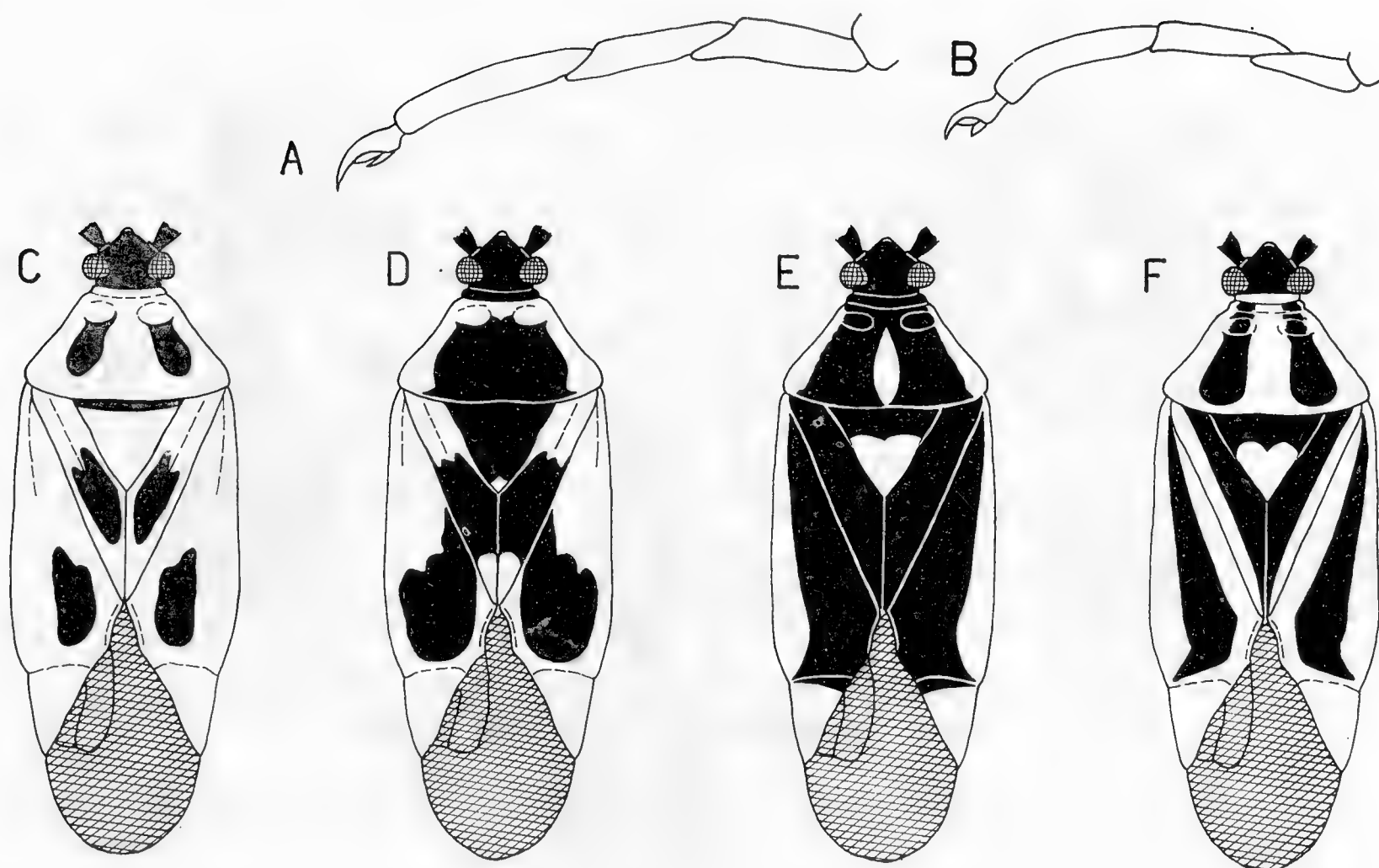


Fig. 34: A, *Calocoris roseomaculatus*; B, *Calocoris norvegicus*; C, *Calocoris nemoralis* f. *hispanica*; D, *Calocoris nemoralis* f. *vittata*; E, *Calocoris nemoralis* f. *nigrovittata*; F, *Calocoris nemoralis* forma grigia a macchie nere.

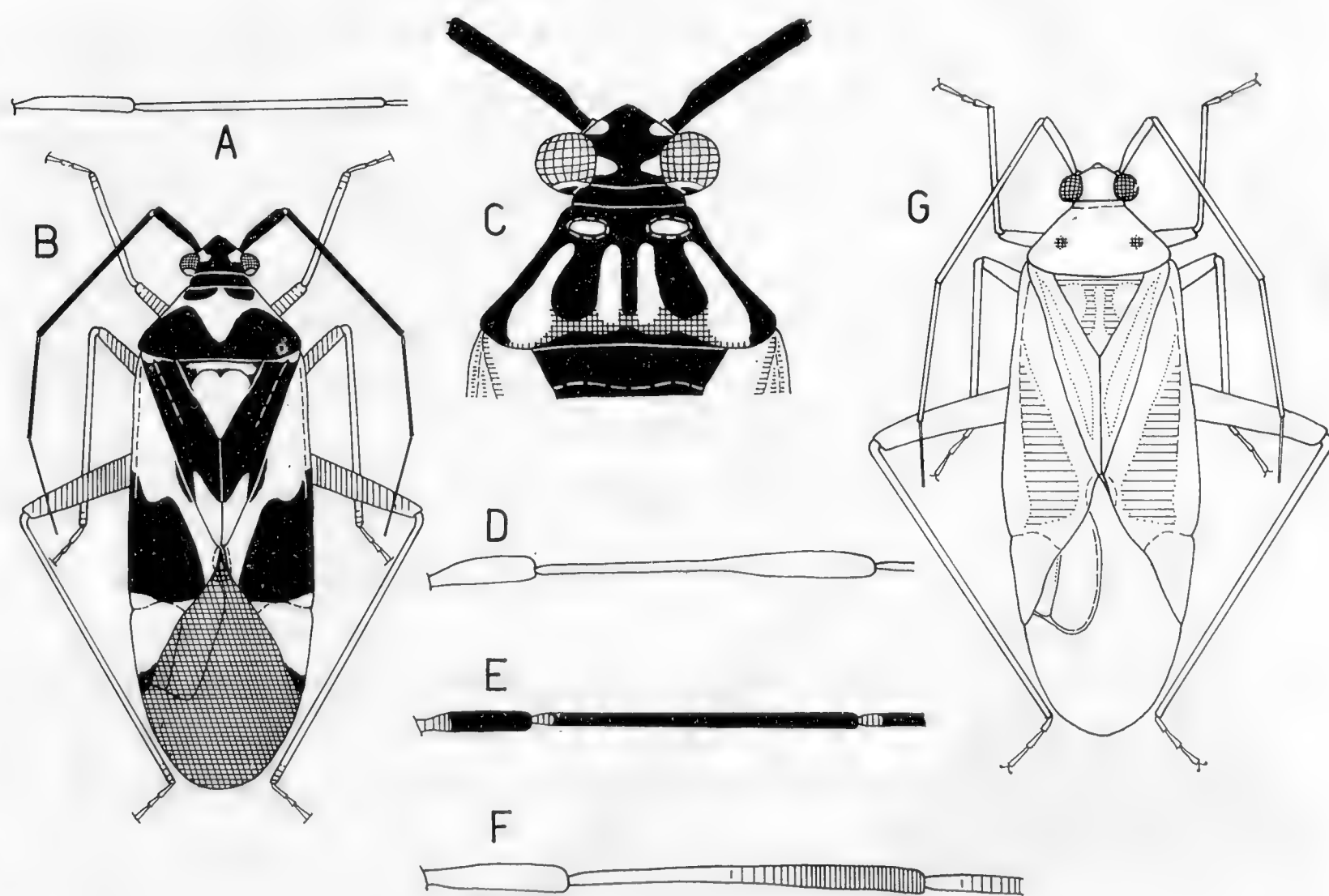


Fig. 35: A, B, *Calocoris sexguttatus*; C, *Calocoris lineolatus*; D, *Calocoris biclavatus*; E, *Adelphocoris seticornis*; F, *Adelphocoris vandalicus*; G, *Adelphocoris lineolatus*.

11. Corpo con squame lucenti sia nelle regioni superiori che inferiori. 12
 — Corpo privo di squame almeno nelle regioni inferiori. *Lygus* Hahn (v. dopo)
12. Primo articolo dei tarsi posteriori lungo quanto il secondo (Fig. 30 G).
Charagochylus Fieb. (2 specie)
 Corpo ovale, convesso, nero; emielitre nero - castanee con il cuneo rosso oscuro o
 castaneo rosso. Lungh. mm 3,2 - 3,9. *C. gyllenbali* (Fall.)
 Eurosibirico - mediterraneo - turanica; presente in tutta Italia su gallio.
- Primo articolo dei tarsi posteriori più breve del secondo (Fig. 31 E).
Polymerus Hahn (8 specie)
 Corpo nero con disegni gialli; margine prossimale del pronoto, punta dello scutello
 e margine laterale del corio gialli (Fig. 31 D). Lungh. mm 5,0 - 6,8.
P. unifasciatus (F.)
 Euroasiatico - ovestmediterranea, neartica; tutta Italia e Sardegna, nei luoghi soleggiati, sui gallio.

Genere *Phytocoris* Fall. (26 specie)

Si muovono con grande rapidità; vivono in generale di caccia e le varie specie, nella maggior parte dei casi, si mantengono su piante determinate, latifoglie, aghifoglie o erbacee. Sono dei zoofagi specializzati che si possono inserire fra gli insetti utili.

1. Terzo articolo delle antenne nero e grigio; alla base e, talvolta in mezzo, può avere un anello chiaro. Specie oltre i 6 mm di lunghezza e di colore grigio. 2
 — Terzo articolo delle antenne chiaro, di rado oscurato alla estremità, mai con distinti anelli chiari. Grandezza varia. 3
2. Pronoto con una fascia laterale oscura (Fig. 33 E). Corpo giallo grigio, con macchie nere sparse. Capo chiaro, antenne nere. Lungh. mm 6,1 - 6,9. *P. tiliae* (F.)
 Europea - ovestmediterranea; su tigli e querce in gran parte dell'Italia e in Sicilia, caccia afidi e microlepidotteri.
- Pronoto con macchie disposte in modo diverso (Fig. 33 G). Corpo grigio o grigio castaneo, di rado quasi nero. Primo articolo delle antenne nero con due - tre linee longitudinali chiare (Fig. 33 F). Lungh. mm 6,3 - 7,2. *P. populi* (L.)
 Europea - ovestmediterranea; in gran parte dell'Italia, in Sicilia e in Sardegna. Attacca in modo speciale psillidi e psocidi delle latifoglie.
3. Primo articolo delle antenne lungo, sottile, con peli più lunghi del diametro dell'articolo (Fig. 33 C); la lunghezza di tale articolo è di poco inferiore alla larghezza prossimale del pronoto; il secondo articolo è due volte il primo. Corpo da giallo a rosso bruno con macchie più oscure; peli gialli con frammisti radi peli neri. Lungh. mm 6,4 - 8,0 (Fig. 33 A). *P. ulmi* (L.)
 Europeo - maghrebina; in tutta Italia su latifoglie con afidi.
- Primo articolo delle antenne più robusto e con i peli eretti più brevi (Fig. 33 D). Macchie delle emielitre rosso castanee. Lungh. mm 5,8 - 7,5. *P. varipes* Boh.
 Europeo - ovestmediterraneo - turanica; in tutta Italia e Sicilia, su varie erbacee di rado su latifoglie.

Genere *Calocoris* Fieber (21 specie)

1. Regioni superiori e zampe con peli neri, eretti e lunghi più del diametro delle tibie. Corpo giallo - bruno con disegni neri (Fig. 35 C). Lungh. mm 7 - 8. *C. lineolatus* (Costa)
 Alpino - appenninica; su conifere, nell'Italia settentrionale e centrale.
- Regioni superiori e zampe con peli coricati e più brevi del diametro delle tibie. 2
2. Peli delle regioni superiori chiari o misti a neri o assenti. 3
 — Peli delle regioni superiori tutti brevi e neri. 4

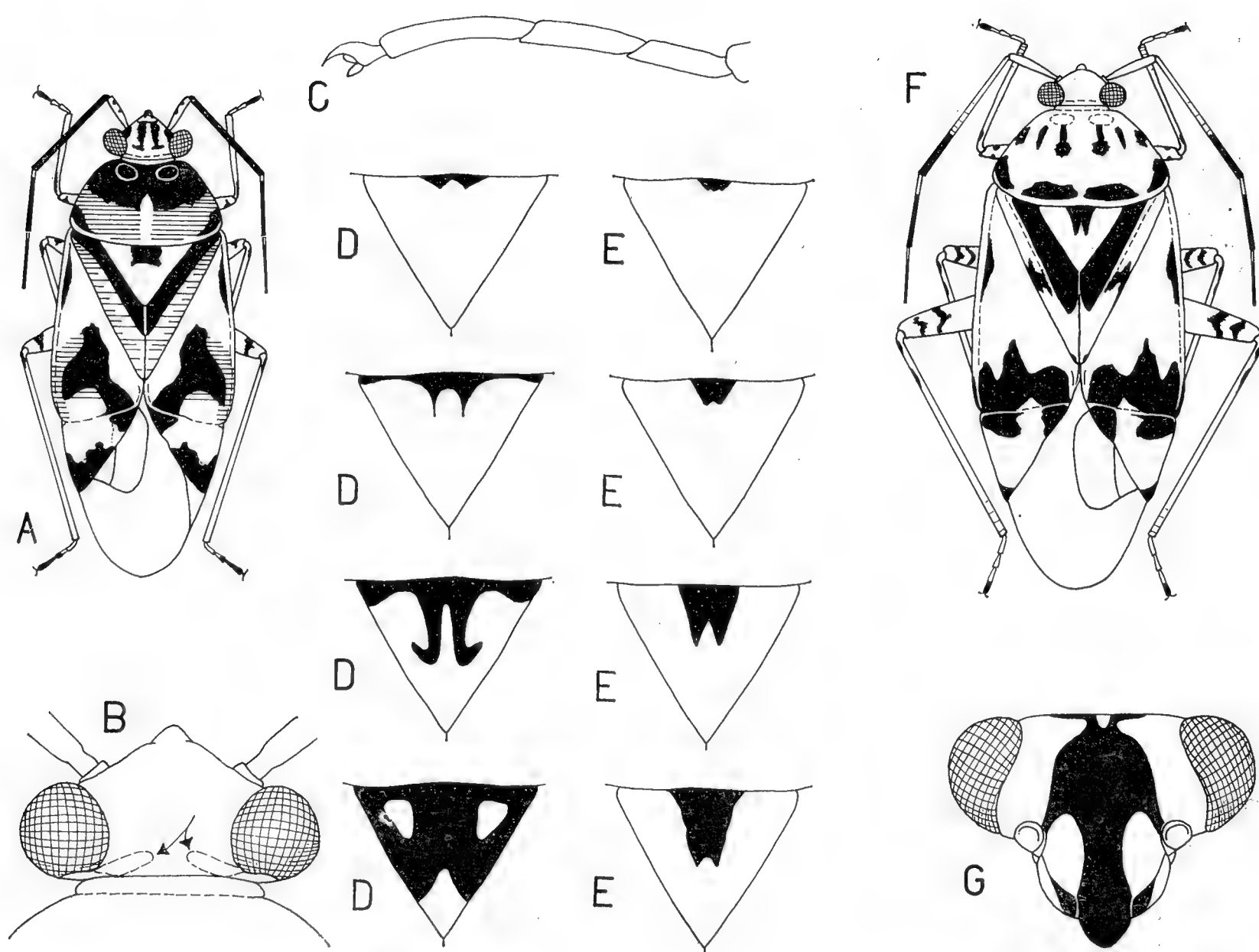


Fig. 36: A, *Lygus basalis*; B, C, *Lygus pabulinus*; D, *Lygus rugulipennis*; E, F, *Lygus pratensis*; G, *Capsodes flavomarginatus*.

3. Secondo articolo delle antenne non ingrossato (Fig. 35 A). Spine delle tibie chiare. Corpo nero con macchie chiare, gialle (Fig. 35 B). Lungh. mm 5,6 - 7,6.

C. sexguttatus (F.)

Europea montana; nell'Italia settentrionale e in Calabria, su aconito, ortica e altre erbacee.

- Secondo articolo delle antenne ingrossato verso l'estremità distale (Fig. 35 D). Spine delle tibie nere. Corpo nero o nero castaneo; pronoto oscuro con il margine basale chiaro (di rado è tutto nero). Corio con poche macchie chiare indistinte. Lungh. mm 5,6 - 7,5.

C. biclavatus (H. S.)

Europea; nell'Italia settentrionale e centrale, fitofago su diverse latifoglie ed erbacee, è pure cacciatore di uova di afidi.

4. Nervature della membrana nere; capo pure nero, solo in rari casi tende al giallo. Corpo nero con le parti superiori bianchicce o arancio o rosso o nere, di rado unicolori, spesso con macchie nere (Figg. 34 C, D, E forme rosse a macchie nere; Fig. 34 F forma grigia a macchie nere). Lungh. mm 8,3 - 9,5.

C. nemoralis (F.) (= *C. hispanicus* Gmel.)

Mediterranea; comune in tutta l'Italia peninsulare, rara nelle zone alpine, sui cirsi, cardi e frumento.

- Nervature della membrana con colori vari, mai nere.

5

5. Primo articolo delle antenne lungo almeno quanto la massima larghezza del capo e grosso quanto il collare anteriore del pronoto. Scutello e lati del pronoto con peluria nera lunga ed eretta. Corpo verde, parallelo, lungo mm 10 - 11. *C. alpestris* (Mey.)

Europea montana; monti e colline dell'Italia settentrionale, su ortiche e artemisie.

- Primo articolo delle antenne più breve della massima larghezza del capo e più robusto del collare del pronoto.

6

6. Primo articolo dei tarsi posteriori distintamente più breve del secondo (Fig. 34 B). Corpo verde. Pronoto fornito spesso di due macchie nere sul disco e negli angoli posteriori. Clavo e corio sovente con macchie allungate, castanee, confuse. Lungh. mm 7,2 - 8,6. *C. norvegicus vittiger* Reut.
Nordmediterranea; tutta Italia e isole. Citato in alcune località per i danni ai peschi, al frumento e alla medica.
- Primo articolo dei tarsi posteriori lungo quasi quanto il secondo (Fig. 34 A). Corpo da verde a giallo - grigio. Capo con macchie nere. Pronoto ed emielitre con macchie rosso - castanee confuse ed assai variabili. Lungh. mm 6,5 - 8,0. *C. roseomaculatus* (De Geer)
Euro - mediterranea; tutta Italia, su artemisia e achillea.

Genere *Adelphocoris* Reuter (7 specie)

1. Primo articolo delle antenne completamente chiaro; secondo chiaro nella parte prossimale, nero ed ingrossato nella distale (Fig. 35 F). Pronoto con una fascia prossimale nera assai variabile. Scutello ed emielitre giallo - castanee o rosso - castanee. Lungh. mm 7,3 - 8,5. *A. vandalicus* (Rossi)
Euroturanico - maghrebina; comune in tutta Italia, su diverse erbacee.
- Secondo articolo delle antenne non ingrossato nella parte distale e diversamente colorato. 2
2. Primi due articoli delle antenne (Fig. 35 E) e scutello neri. Corpo nero con peluria chiara; margine prossimale e collare del pronoto, margine laterale delle emielitre chiari. Cuneo spesso rosso con la punta chiara, di rado è con le emielitre completamente nere. Capo Figg. 16 A, B. Lungh. mm 6,7 - 8,3. *A. seticornis* (F.)
Eurosinibirico - anatolico - turanica; comune su trifoglio e medica in tutta Italia.
- Primi due articoli delle antenne e scutello chiari. Corpo verde parallelo; pronoto concolore o con due punti neri sul disco (aberr. *binotata*, Fig. 35 D); corio spesso con una debole macchia triangolare. Lungh. mm 7,6 - 9,5. *A. lineolatus* (Gz.)
Euroasiatico - olomediterranea; comune sui prati di tutta Italia ed in modo speciale su erba medica, trifoglio e ononis.

Genere *Lygus* Hahn (22 specie)

1. Primo articolo delle antenne più breve della massima larghezza del capo. Corpo rosso - castaneo chiaro, opaco. Secondo articolo delle antenne leggermente ingrossato, specie nel maschio. Lungh. mm 4,4 - 5,0. *L. rubicundus* (Fall.)
Euroasiatico - olomediterranea; sui salici dell'Italia settentrionale e centrale.
- Primo articolo delle antenne nettamente più lungo della maggiore larghezza del capo. 2
2. Capo con il vertice limitato posteriormente da una carena completa. 3
- Carena del vertice interrotta nel mezzo (Fig. 36 B). Corpo completamente verde. Rostro proteso fino alle anche posteriori. Lungh. mm 5,0 - 6,6. *L. pabulinus* (L.)
Oloartica; in tutta Italia su piante erbacee; in luoghi umidi.
3. Corpo verde; scutello e corio con deboli macchie oscure. Rostro proteso oltre le coxe posteriori. Spine delle tibie chiare anche alla base. Lungh. mm 4,8 - 5,7. *L. apicalis* Fieb.
Cosmopolita; in tutta Italia e isole, su inule, tamarici ed altre piante.
- Corpo con altra colorazione; quando è verde la lunghezza del corpo è inferiore a mm 4,8. 4

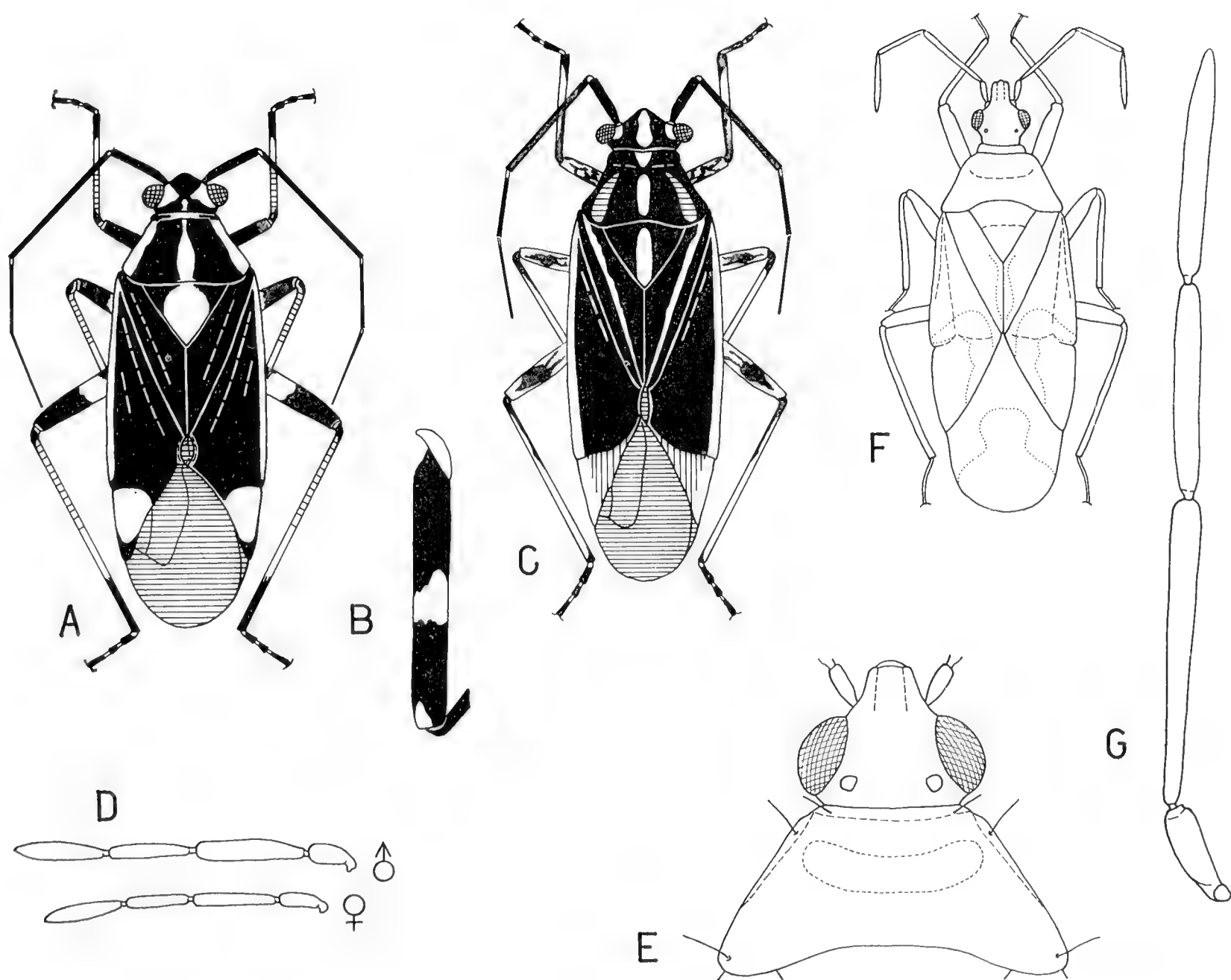


Fig. 37: A, *Capsodes flavomarginatus*; B, *Capsodes lineolatus*; C, *Capsodes cingulatus*; D, E, *Orius niger*; F, G, *Anthocoris nemorum*.

4. Tibie chiare anche alla base, con le spine pure chiare, almeno nelle tibie anteriori. 5
- Tibie oscurate alla base e con tutte le spine nere. 6
5. Margine esterno delle emielitre nero (osservare l'es. da sotto). Corpo giallo con macchie nere spesso molto estese (Fig. 36 A). Lungh. mm 4,0 - 5,2. *L. basalis* (Costa) Europea; in tutta Italia, su ombrellifere.
- Margine esterno delle emielitre sempre chiaro. Corpo verde con macchie nere variabili. Lungh. mm 3,5 - 4,5. *L. campestris* (L.) Eurosibirico - ovestmediterraneo - anatolico - turanica; comune su ombrellifere in tutta Italia.
6. Peli delle regioni superiori molto sottili e fitti, così che l'esemplare appare opaco. Corpo verde, grigio, castaneo o nericcio con macchie assai variabili; caratteristiche quelle dello scutello (Fig. 36 D). Lungh. mm 4,7 - 5,7. *L. rugulipennis* Pop. (= *L. pubescens* Reut.) Palearctica; comune in tutta Italia. Segnalato come dannoso a verdure ortensi, ma caccia pure afidi, larve di lepidotteri e uova di coleotteri.
- Peli delle regioni superiori assai più spaziosi, interspazi lucenti. Scutello con una macchia a due punte (Figg. 36 E). Antenne nere. Corpo giallo-grigio o giallo-castaneo, spesso con pronoto ed emielitre rossastre. Disposizione più comune delle macchie (che possono anche mancare) come in Fig. 36 F. Lungh. mm 5,8 - 7,3. *L. pratensis* (L.) Palearctica; comune in tutta Italia e isole su piante erbacee. E' ricordata spesso come dannosa alle foraggere e al frumento, ma è pure zoofaga come la precedente.

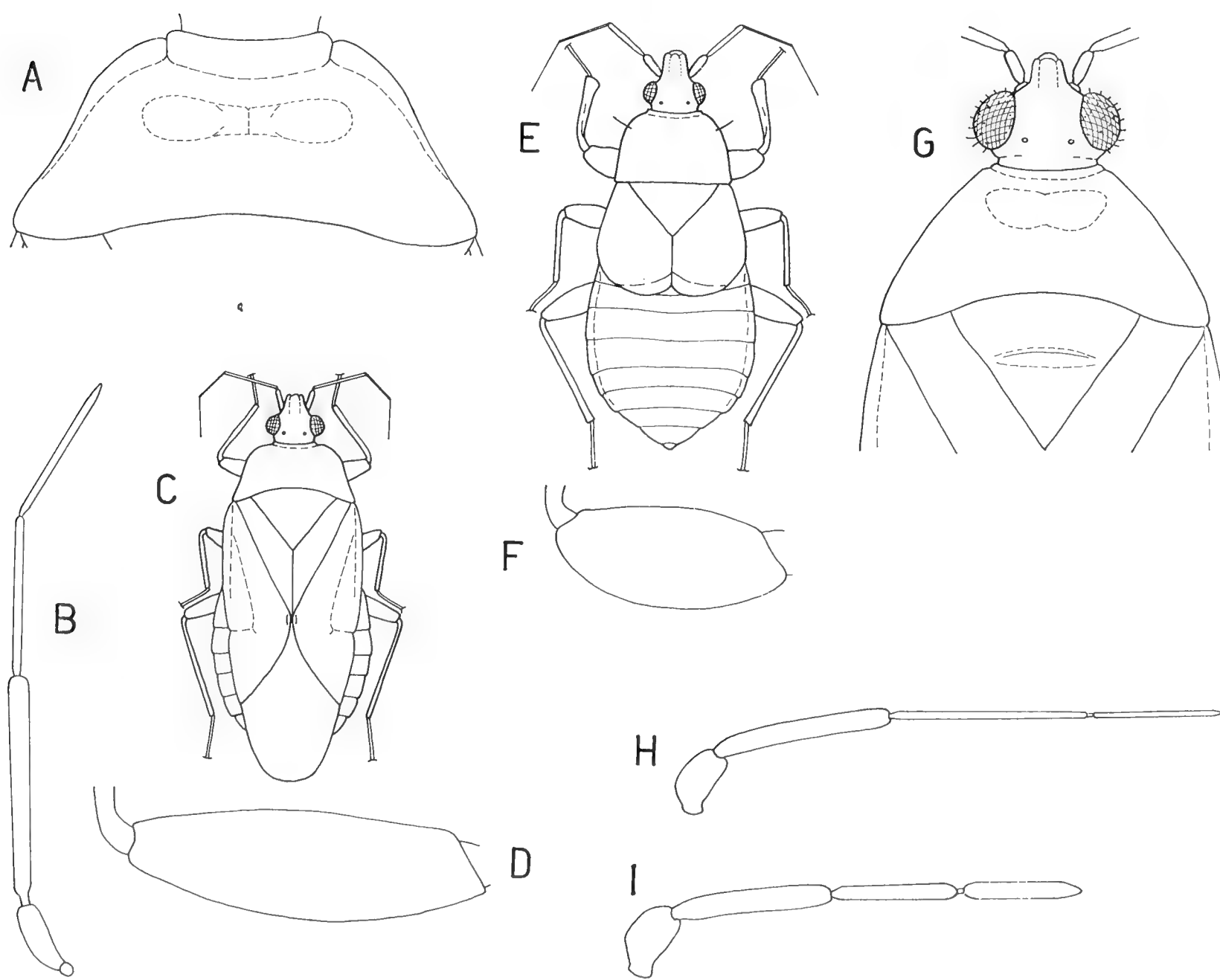


Fig. 38: A, *Tetraphleps bicuspis*; B, C, D, *Lyctocoris campestris*; E, F, *Xylocoris cursitans*; G, *Brachysteles rufescens*; H, *Cimex lectularius*; I, *Oeciacus hirundinis*.

Genere *Capsodes* Dahl. (7 specie)

1. Pronoto con il margine posteriore diritto (Fig. 37 A). 2
- Pronoto con il margine posteriore incavato (Fig. 37 C). 3
2. Regioni superiori con peluria breve, adagiata e chiara. Scutello con gli angoli basali neri. Corpo nero, lucente, con disegni come in Figg. 36 G e 37 A. Lungh. mm 6,9 - 7,7. *C. flavomarginatus* (Don.)
Atlantico - mediterranea; Italia peninsulare, su gallio e linaria.
- Regioni superiori con la peluria lunga, eretta, nera. Scutello nero con la punta rossa. Corpo nero, poco lucente, con macchie chiare simili a quelle della specie precedente. Lungh. mm 5,8 - 7,0. *C. gothicus* (L.)
Eurosibirico - ovestmediterranea; in molte regioni italiane, su ortica, gallio e altre erbacee.
3. Castaneo nero con disegni giallo - bianchi (Fig. 37 C). Femori posteriori chiari con macchie scure irregolari o completamente neri. Lungh. mm 5,4 - 6,9. *C. cingulatus* (F.)
Medioeuropeo - mediterranea; nell'Italia peninsulare, in luoghi soleggiati.
- Castaneo - nero o nero con disegni rosso scuro o arancio, simili a quelli della specie precedente. Femori posteriori castanei o neri con un anello mediano chiaro (Fig. 37 B). Lungh. mm 6,5 - 8,0. *C. lineolatus* (Brullé)
Mediterranea; nell'Italia mediterranea, su diverse erbacee.

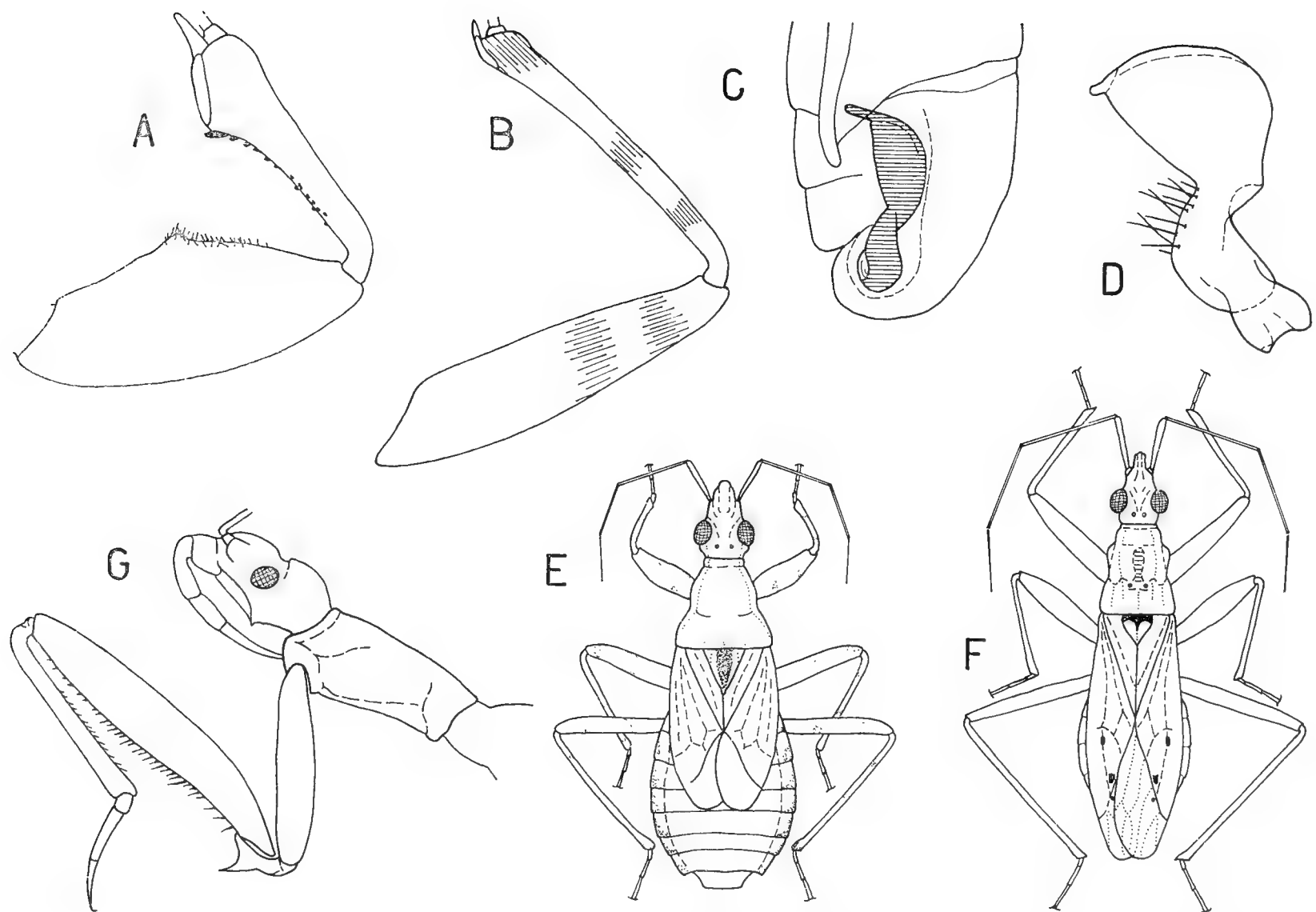


Fig. 39: A, *Prostemma guttula*; B, E, *Aptus mirmicoides*; C, *Nabis punctatus*; D, F, *Nabis mediterraneus*; G, *Ploearia domestica*.

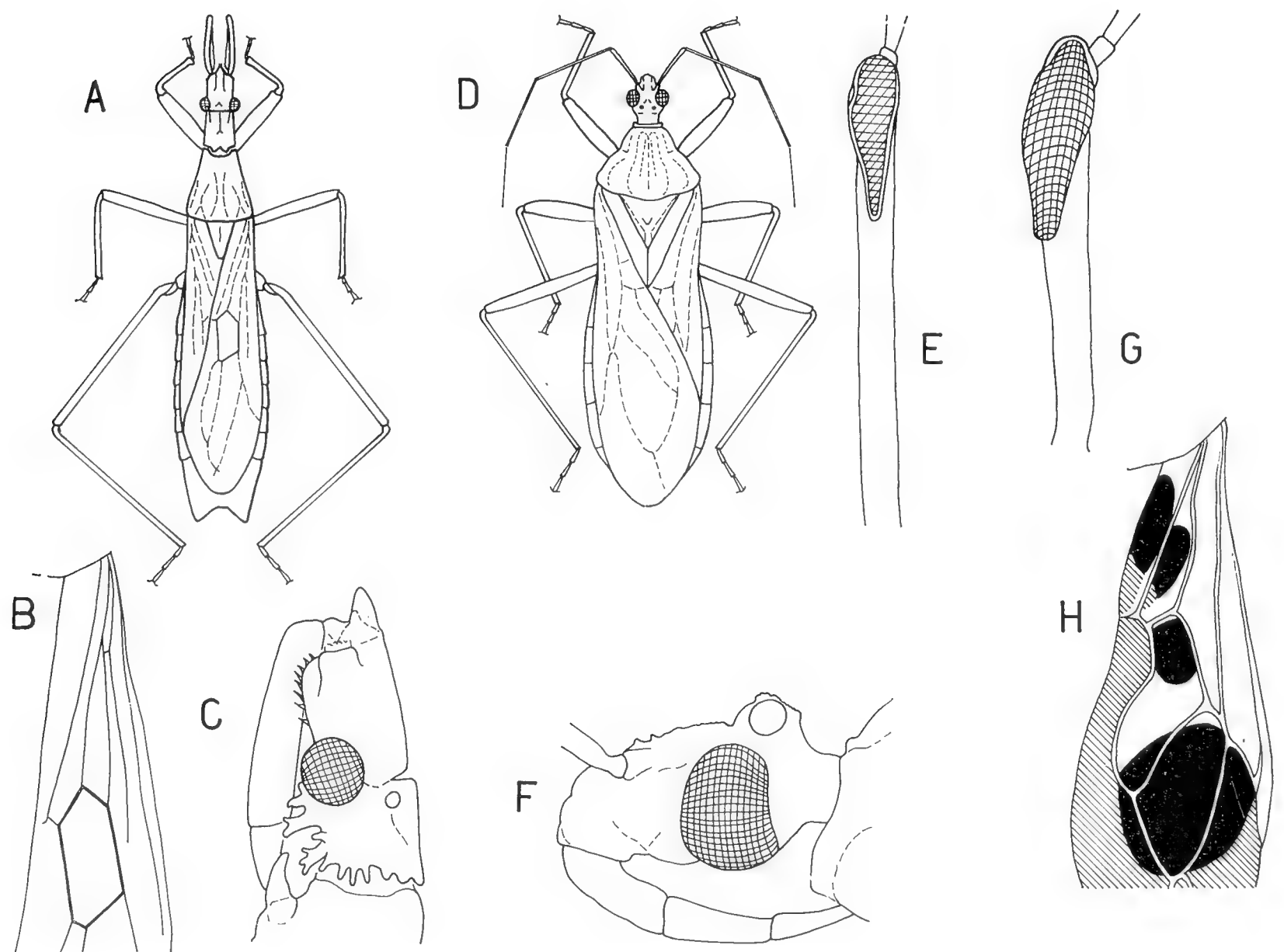


Fig. 40: A, B, C, *Pygolampis bidentata*; D, E, *Reduvius personatus*; F, *Oncocephalus squalidus*; G, H, *Pirates hybridus*.

Famiglia XVII. **Microphysidae** (Microfisidi; 2 generi, 10 specie)

I Microfisidi sono minuscoli cacciatori di insetti e loro larve che cercano nei muschi, sotto le cortecce e nei nidi di formiche. I maschi sono alati, le femmine spesso attere.

1. Rostro sottile e prolungato oltre il prosterno. Secondo articolo delle antenne distintamente più lungo del quarto. *Loricula* Curtis (4 specie)
Maschio alato, castaneo - nero, cuneo rossiccio e talvolta anche il capo. Terzo articolo delle antenne più breve della lunghezza del capo avanti gli occhi. Lungh. mm 2,4 (Fig. 5 F). Femmina attera (Fig. 5 G) con capo e pronoto giallo - castaneo, addome nero lucente. Lungh. mm 1,6. *L. elegantula* (Bär.)
Europea centrosettentrionale; Italia settentrionale e Umbria.
- Rostro robusto, breve; non sorpassa le coxe anteriori. Secondo articolo delle antenne lungo quanto il quarto o più breve. *Myrmedobia* Bär. (6 specie)
Maschio alato, corpo ovale allungato, castaneo - nero; pronoto trapezoidale a lati diritti, anteriormente piatti. Lunghezza mm 2,5. Femmina con le emielitre lunghe quanto lo scutello; addome rotondoide; pronoto trapezoidale, anteriormente, più largo del capo (Fig. 89 C, femmina). Lungh. mm 1,7. *M. distinguenda* Reut.
Europea centrosettentrionale; Italia settentrionale.

Famiglia XVIII. **Anthocoridae** (Antocoridi; 14 generi, 45 specie)

La maggior parte degli Antocoridi sono cacciatori di piccoli insetti, loro larve e uova; si trovano nei fiori, sotto le cortecce, nel fogliame guasto, nelle colonie di afidi o in nidi di formiche.

1. Due ultimi articoli delle antenne di poco più sottili dei primi (Figg. 37 D, G) o uguali. 2
- Due ultimi articoli delle antenne filiformi, molto più sottili dei primi (Fig. 38 B). 5
2. Pronoto privo di collare anteriore (Fig. 37 E). Corpo ovale alato. *Orius* Wolff (11 specie)
— Quattro angoli del pronoto provvisti di una setola eretta. Margine laterale anteriore del pronoto con orlo piatto. Capo, pronoto e scutello neri o nero - castanei. Tibie anteriori gialle, medie e posteriori nere. Lungh. mm 2 (Figg. 37 D, E). *O. niger* (Wolff)
Eurosibirico - mediterraneo - turanica; comune in tutta l'Italia, sui fiori (pronubo e cacciatore).
- Pronoto con un distinto collare anteriore (Fig. 37 F). 3
3. Rostro proteso fino alle coxe medie. Occhi pressoché a contatto del pronoto. *Acampocoris* Reut. (2 specie)
— Rostro proteso al più fino alle coxe anteriori. 4
4. Collare anteriore del pronoto, ai lati, libero (Fig. 37 F). Emielitre lisce o solo con il corio punteggiato. *Anthocoris* Fall. (10 specie)
Antenne più lunghe del capo e del pronoto uniti; articoli sottili e cilindrici. Pronoto completamente nero. Emielitre lisce e lucenti (Figg. 37 F, G). Lungh. mm 4,5. *A. nemorum* (L.)
Eurosibirico - estmediterranea; comune in tutta Italia, predatore onnivoro, si trova spesso sugli alberi da frutta.
- Collare anteriore del pronoto chiuso ai lati dall'orlo appiattito del pronoto (Fig. 38 A.). Emielitre densamente zigurate e con fine punteggiatura. *Tetraphleps* Fieber (1 specie)
Corpo nero opaco, emielitre castanee o castaneo - nere, membrana con due macchie chiare. Zampe castanee con le tibie gialle. Lungh. mm 3. *T. bicuspis* H. S.
Europea centrosettentrionale; Italia alpina, sulle resinose con colonie di afidi.

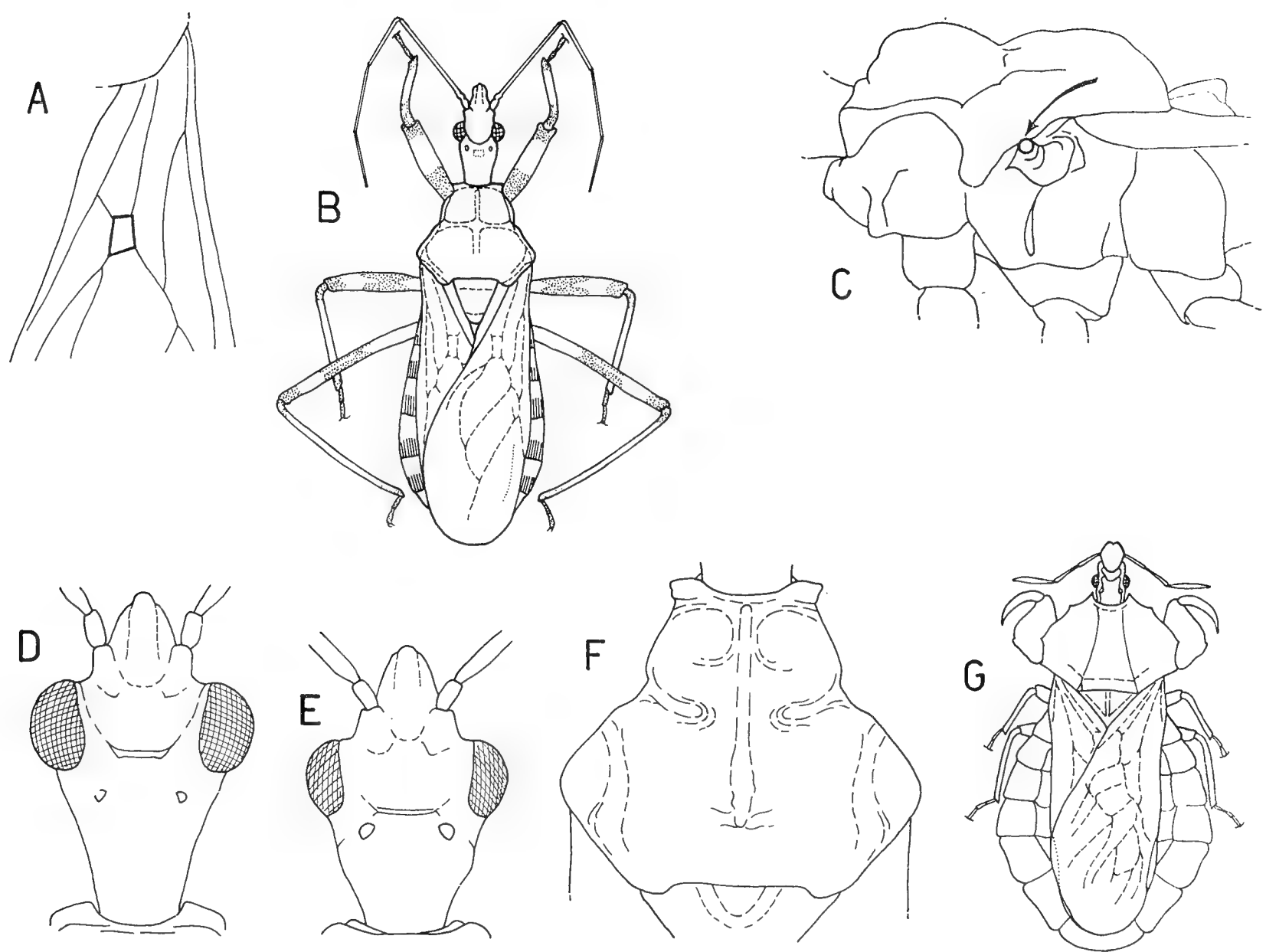


Fig. 41: A, B, *Rhinocoris iracundus*; C, E, *Coranus aegyptius*; D, *Coranus subapterus*; F, *Sphe-danolestes cingulatus*; G, *Phymata crassipes*.

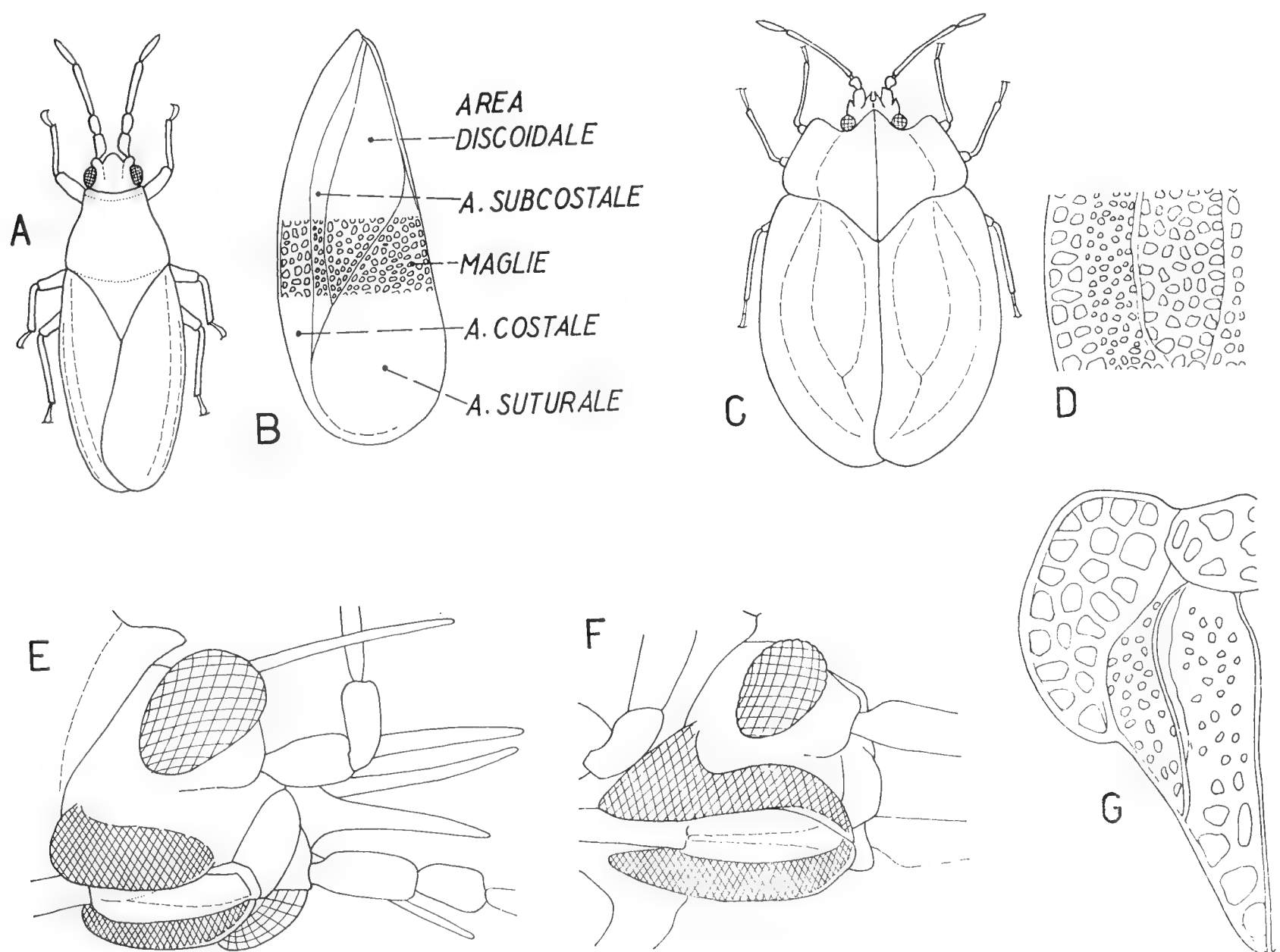


Fig. 42: A, *Agramma intermedia*; B, *Tingis cardui*; C, D, *Acalypta musci*; E, *Galeatus spini-frons*; F, *Stephanitis pyri*; G, *Dictyonota tricornis*.

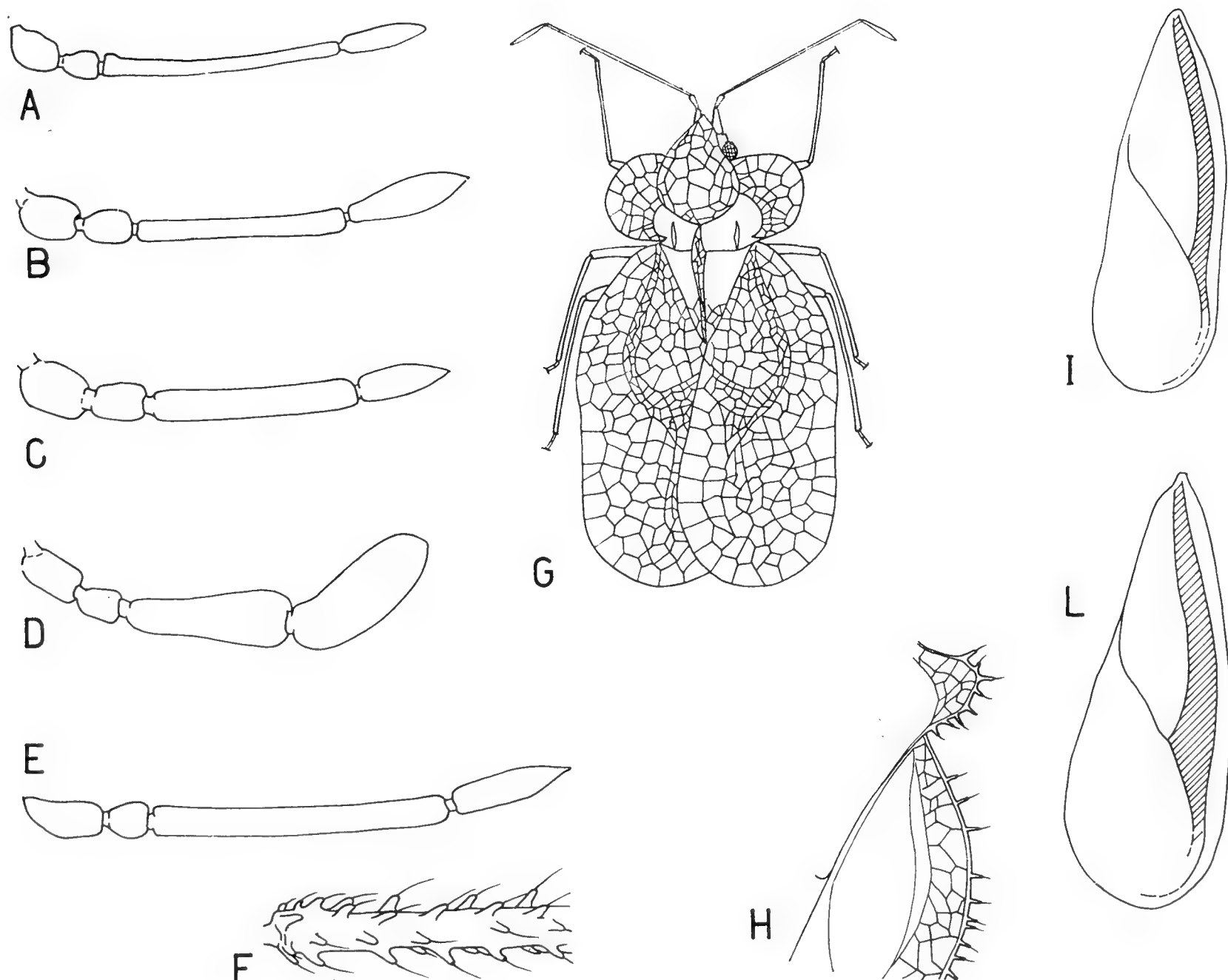


Fig. 43: A, *Acalypta musci*; B, *Tingis cardui*; C, *Catoplatus fabricii*; D, *Copium clavicorne*; E, F, *Dictyonota tricornis*; G, *Stephanitis pyri*; H, *Lasiacantha*; I, *Physatocheila dumetorum*; L, *Dictyla echii*.

5. Scutello piano.

6

- Scutello diviso in due parti da un incavo trasverso. Capo lungo quanto largo o più breve. Femori anteriori inermi. Margine anteriore del pronoto concavo (Fig. 38 G).

Brachysteles Muls. (3 specie)

Occhi con fine peluria gialla. Corpo giallo castaneo, lucente. Lungh. mm 3 (Fig. 38 G).

B. rufescens (Costa)

Sudeuropeo - anatolico - circumtirrenica; tutta l'Italia comprese le isole.

6. Femori anteriori poco ingrossati (Fig. 38 D). Margine posteriore dell'addome solo con peluria breve.

Lyctocoris Hahn (2 specie)

Secondo articolo delle antenne più breve della massima larghezza del capo. Corpo castaneo; emielitre giallo - mattone unicolori o con macchie castanee (Figg. 38 B, C, D). Lungh. mm 3 - 4.

L. campestris (F.)

Cosmopolita; comune in tutta l'Italia in magazzini e depositi di materie vegetali, come all'aperto sotto il fogliame dove caccia piccoli insetti e loro uova. Non è raro in ripostigli umidi delle nostre abitazioni e nelle stalle.

- Femori anteriori fortemente ingrossati (Fig. 38 F). Margine posteriore dell'addome con dei peli molti lunghi.

Xilocoris Duft. (6 specie)

Corpo nero; emielitre della forma alata lucenti, nere, con una macchia allungata gialla nel mesocorio. Emielitre della forma brachittera protese fino al terzo tergite, castanee (Figg. 38 E, F). Lungh. mm 2,0 - 2,5.

X. cursitans (Fall.)

Eurosibirico - mediterraneo - turanica, neartica; in tutta Italia, sotto la corteccia di rami e tronchi di resinose attaccate dagli Ipidi, succhia le larve.

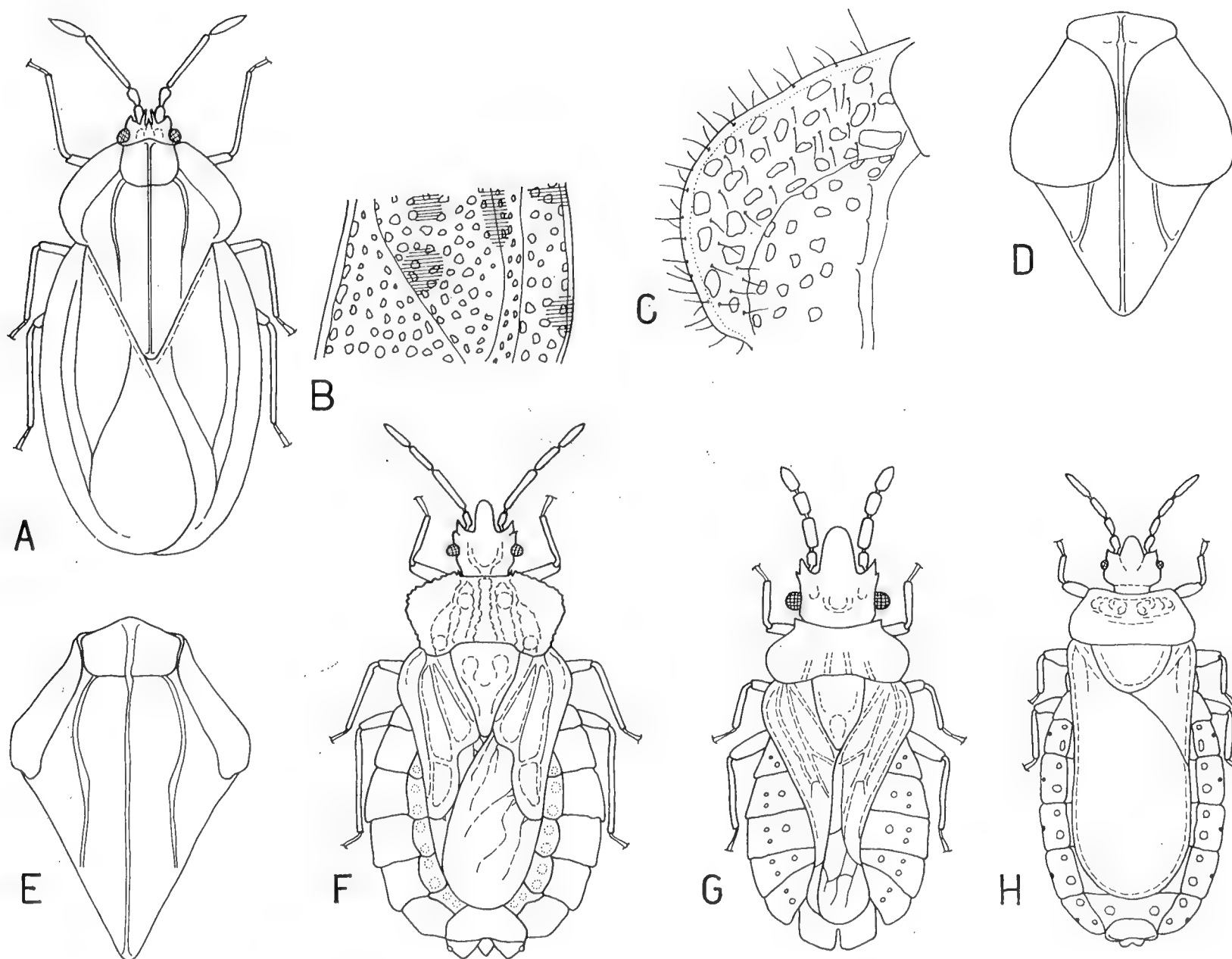


Fig. 44: A, B, *Tingis cardui*; C, *Tingis reticulata*; D, *Onchochyla scapularis*; E, *Physatocheila dumetorum*; F, *Aradus crenatus*; G, *Aradus cinnamomeus*; H, *Aneurus laevis*.

Famiglia XIX. **Cimicidae** (Cimicidi; 2 generi, 3 specie)

Sono tutti atteri e succhiano il sangue di mammiferi o uccelli.

1. Margine anteriore del pronoto incavato; due ultimi articoli delle antenne nettamente più sottili dei primi (Figg. 5 I, 38 H). Cimex L. (2 specie)
Corpo uniformemente giallo-castaneo; margine anteriore del pronoto prolungato ai lati in due larghe apofisi arrotondate. Lungh. mm 3,5-6,5. C. lectularius (L.)
Cosmopolita; la sua diffusione nelle nostre abitazioni va diminuendo specie nel settentrione.
- Margine anteriore del pronoto meno incavato ed ultimi due articoli delle antenne poco più sottili dei primi (Fig. 38 I). Oeciacus Stal. (1 specie)
Colorazione del corpo di poco più chiara che nella specie precedente. Lungh. mm 2,5-3,5. O. hirundinis Jean.
Europea centrosettentrionale; Italia settentrionale, in nidi di rondine.

Famiglia XX. **Nabidae** (Nabidi; 4 generi, 23 specie)

Tutte le specie sono prevalentemente cacciatrici di altri insetti, loro larve e uova.

1. Femori ingrossati e forniti di uno sperone (Fig. 39 A, zampa anteriore). 2
- Femori normali e privi di sperone (Fig. 39 B, zampa anteriore). 3
2. Solo i femori anteriori sono ingrossati e con sperone. Prostemma Lap. (4 specie)
Corpo nero, pronoto nero lucente; emielitre nerice con il corio rosso. Zampe rosse con lunghi peli semieretti. Lungh. mm 7-10 (Fig. 39 A). P. guttula (F.)
Atlantico - mediterraneo - turanica; pressoché in tutta Italia e grandi isole.

- Femori anteriori ingrossati e provvisti di sperone. Specie piccole castaneo - nerice.
Alloeorhynchus Fieb. (2 specie)
- 3. Antenne più brevi del corpo e primo articolo antennale lungo quanto la testa.
Aptus Hahn
Corpo castaneo o nerastro. Forma del capo da sopra e di fianco come in Figg. 4 G, H
e del corpo come in Figg. 39 B, E. *A. mirmicoides* (O. Costa)
Euromediterranea; comune in tutta Italia e isole.
- Antenne lunghe circa come il corpo. Connexivo posto quasi orizzontalmente. Tergiti
divisi dal connexivo da un profondo canale. *Nabis* Latr. (13 specie)
- a. Corio con punti castaneo - neri più numerosi verso il margine laterale; membrana
sempre bene sviluppata e almeno con 2 grandi celle allungate e ovali (distintamen-
te più larghe della grossezza delle tibie posteriori). Paramero destro del maschio
Fig. 39 C (estremità dell'addome vista di lato, paramero tratteggiato).
N. punctatus Costa (= *N. feroides* Rem.)
Sudeuropeo - circumtirrenica; diffusa in tutte le regioni italiane e Sicilia.
- b. Corio privo di punti castaneo - neri specie verso l'esterno; membrana della forma
macrottera con tre o più celle strette e lunghe (più strette o uguali alla grossezza
delle tibie p.). Membrana della forma brachittera come nella Fig. 39 F. Paramero del
maschio Fig. 39 D. *N. mediterraneus* Remane
Mediterranea settentrionale; comune in tutta l'Italia appenninica, rara a nord del Po.

Famiglia XXI. **Reduviidae** (Reduvidi; 20 generi, 41 specie)

Tutti i nostri Reduvidi sono cacciatori di diversi insetti e loro larve. La pun-
tura di alcune specie è molto dolorosa.

- 1. Capo privo di ocelli. Coxae anteriori molto lunghe, sorpassano la lunghezza del capo
(Fig. 39 G). 2
- Capo con o senza ocelli. Coxae anteriori molto più brevi del capo. 3
- 2. Tarsi anteriori articolati fra loro, ultimo articolo con due unghie uguali. Scutello con
una lunga spina. Macrotteri. Esili e delicati cacciatori dall'aspetto di moscerini,
mm 4 - 6. *Empicoris* Wolff (2 specie)
- Tarsi anteriori di 3 articoli fusi fra loro, ultimo con 2 unghie disuguali. Scutello
privo di spina. Atteri. *Ploearia* (Scop. (2 specie)
- Capo con la metà posteriore (vista di lato) degradante dolcemente verso la base
Fig. 39 G). Corpo giallo paglierino, parallelo, con le zampe medie e posteriori mol-
to lunghe ed esili. *P. domestica* Scop.
Mediterraneo - turanico - macaronesica; presente in tutte le regioni e isole italiane
negli ambienti umidi delle abitazioni vecchie.
- 3. Capo provvisto di ocelli. 4
- Capo privo di ocelli. *Politoxus* Spin. (2 specie)
- 4. Corio con una grande cella discoidale poligonale (Fig. 40 B). 5
- Corio privo di cella discoidale o questa è piccola e quadrangolare (Fig. 41 A). 6
- 5. Occhi, visti di lato, rotondi (Fig. 40 C) e sotto il capo molto distanziati fra di loro.
Pygolampis Germ. (1 specie)
- Corpo allungato, conico, piatto, grigio - castaneo. Lungh. mm 13 - 16 (Fig. 40 A,
B, C). *P. bidentata* Gz.
Eurosibirico - turanica; in tutte le nostre regioni ed isole, nelle zone molto umide o
paludose.
- Occhi, visti di lato, reniformi (Fig. 40 F) e sotto il capo quasi a contatto fra di
loro. *Oncocephalus* Klug. (3 specie)
- Giallo - paglia o giallo - castaneo; corio e membrana privi di macchie. Zampe e an-
tenne con lunghi peli semieretti. Lungh. mm 14 - 15. *O. squalidus* Rossi
Mediterranea; nell'Italia appenninica e isole, rara nel settentrione.
- 6. Primo articolo delle antenne più breve del secondo. Unghie semplici. 7
- Primo articolo delle antenne più lungo del secondo. Unghie dentate. 10

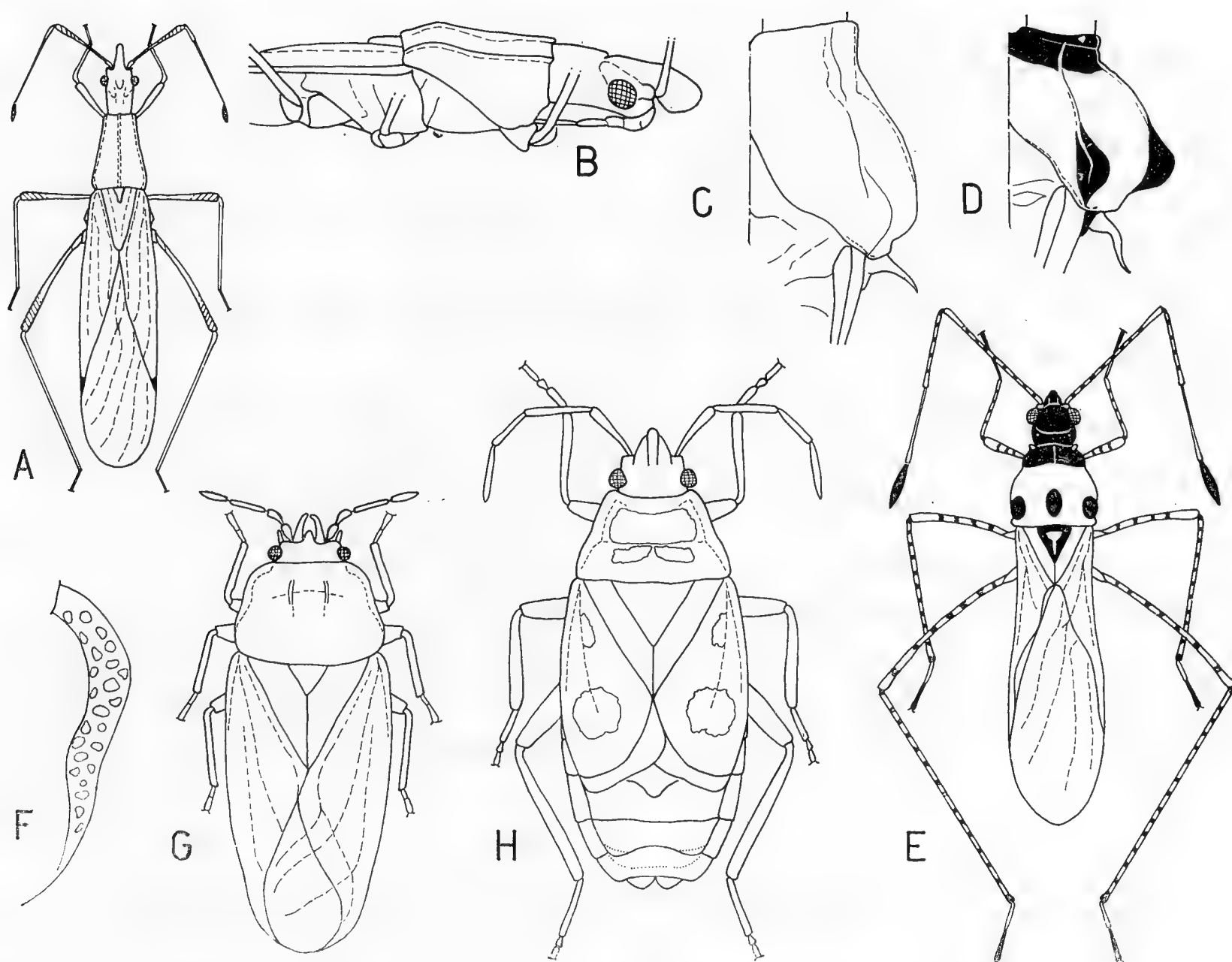


Fig. 45: A, B, *Berytinus montivagus*; C, D, *Metacanthus meridionalis*; E, *Gampsocoris punctipes*; F, G, *Piesma maculata*; H, *Pyrrhocoris apterus*.

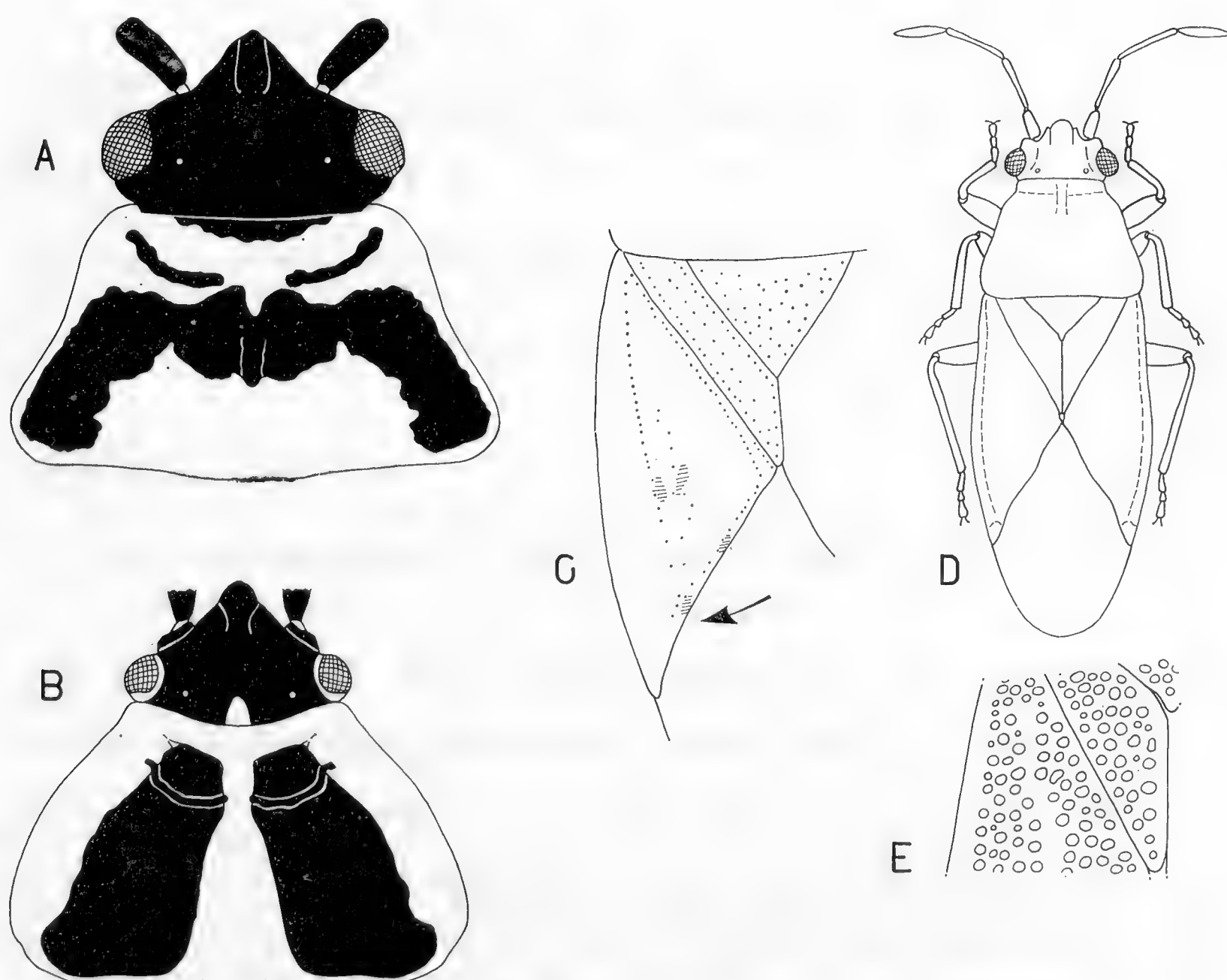


Fig. 46: A, *Arocatus melanocephalus*; B, *Tropidothorax leucopterus*; C, *Kleidocerys ericae*; D, E, *Cymus glandicolor*.

7. Emielitre unicolori, castaneo - nere o testaceo - paglierine. 8
 — Emielitre rossastre o arancio con macchie nere. 9
8. Corpo unicolore, castaneo. Estremità delle tibie anteriori, sul lato posteriore, con un organo triangolare piatto o leggermente convesso lungo circa 1/3 della tibia (Fig. 40 E). *Reduvius* Fieb. (3 specie)
 Corpo parallelo, alato, lucente, con lunghi peli semieretti (Fig. 40 D). Lungh. mm 16 - 18. *R. personatus* (L.)
 Cosmopolita; tutta Italia e isole, sotto i portici, nelle vecchie stalle, nei ripostigli delle case.
- Corpo nero, pronoto ed emielitre testaceo paglierine; tibie anteriori semplici. Maschio alato, femmina microttera. *Holotrichius* Burm. (1 specie)
 Angoli laterali del pronoto leggermente prominenti in angolo acuto. Lungh. mm 16 - 17. *H. denudatus* Costa
 Sudeuropea orientale - anatolica; Italia appenninica e Sicilia, rara a nord del Po.
9. Organo triangolare delle tibie anteriori (analogo a quello del genere *Reduvius*) lungo circa quanto la metà della tibia (Fig. 40 G). *Pirates* Scop. (3 specie)
 Corpo nero; emielitre rosse con macchie nere (Fig. 40 H). Lungh. mm 12 - 13. *P. hybridus* (Scop.)
 Sudeuropeo - sudmediterraneo - turanica; tutta Italia, in luoghi secchi.
- Organo triangolare delle tibie anteriori lungo quasi quanto le tibie. *Ectomocoris* May. (2 specie)
 Corpo nero; emielitre castaneo - rosse o ocre con disegni gialli. Lungh. mm 15 - 20. *E. ululans* (Rossi)
 Mediterraneo - centroasiatica; Italia appenninica e Sicilia.
10. Mesosterno, in prossimità del margine posteriore del pronoto, con un piccolo cornetto (Fig. 41 C, torace visto di lato). *Coranus* Curt. (v. dopo)
- Mesosterno in prossimità del margine posteriore del pronoto liscio. 11
11. I solchi trasversale e longitudinale mediano del pronoto, nel punto di incontro si fondono (Fig. 41 B); femori sottili, uniformi paralleli. *Rhinocoris* Hahn (v. dopo)
- Solco trasverso mediano del pronoto distintamente interrotto dal longitudinale, più profondo (Fig. 41 F); femori leggermente ingrossati e nodosi. *Sphedanolestes* Stal (4 specie)
 Corpo nero, emielitre nero - castanee, zampe nere, femori con tre anelli rossi. Lungh. mm 10 - 12. *S. cingulatus* (Fieber)
 Sudappenninica - sicula; endemismo italiano.

Genere *Rhinocoris* Hahn (6 specie)

1. Nero, connexivo con macchie alterne rosse e nere, femori e tibie con anelli rossi, emielitre completamente nere. Lungh. mm 12 - 13 *R. annulatus* (L.)
 Eurosibirica; Italia settentrionale e appenninica montana.
- Elitre mai completamente nere 2
2. Scutello completamente nero o solo con la punta rossa; rostro almeno in parte rosso. Lungh. mm 14 - 16 (Fig. 4 E F, 41 A B) *R. iracundus* (Poda)
 Sudeuropeo - nordmediterranea asiatico - indiana; tutta Italia e isole.
- Scutello nero con la punta e la carena longitudinale mediana gialla. Rostro nero. Lungh. mm 14 - 15. *R. erythropus* (L.)
 Sudeuropea - nordafricana; tutta Italia e isole.

Genere *Coranus* Curt. (4 specie)

1. Dorso dell'addome rossiccio; metà posteriore del capo più breve dell'anteriore (Fig. 41 E). Lungh. mm 8 - 10. *C. aegyptius* (F.)
 Sudeuropea sudmediterraneo - turanico - macaronesica; tutta Italia e isole.
- Dorso dell'addome nero o castaneo; porzione posteriore del capo (oltre l'incavo trasverso) uguale o più lunga dell'anteriore (Fig. 41 D). Lungh. mm 10 - 11. *C. subapterus* (De Geer)
 Eurosibirico - turanico - circumtirrenica; tutta Italia e Sardegna.

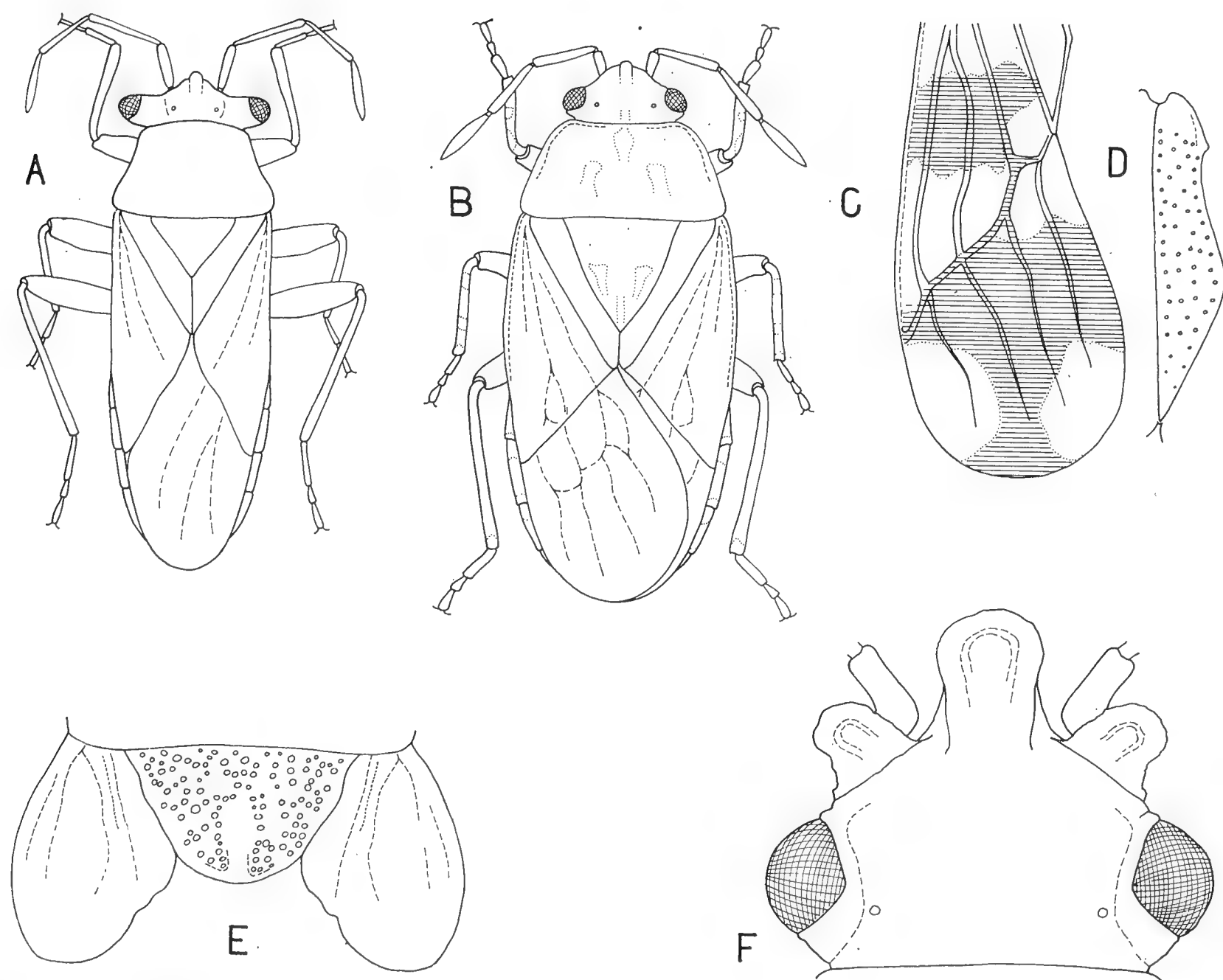


Fig. 47: A, *Henestaris laticeps*; B, *Platyplox salviae*; C, D, *Macroplax fasciata*; E, *Nithecius jacobaeae*; F, *Metopoplax ditmoides*.

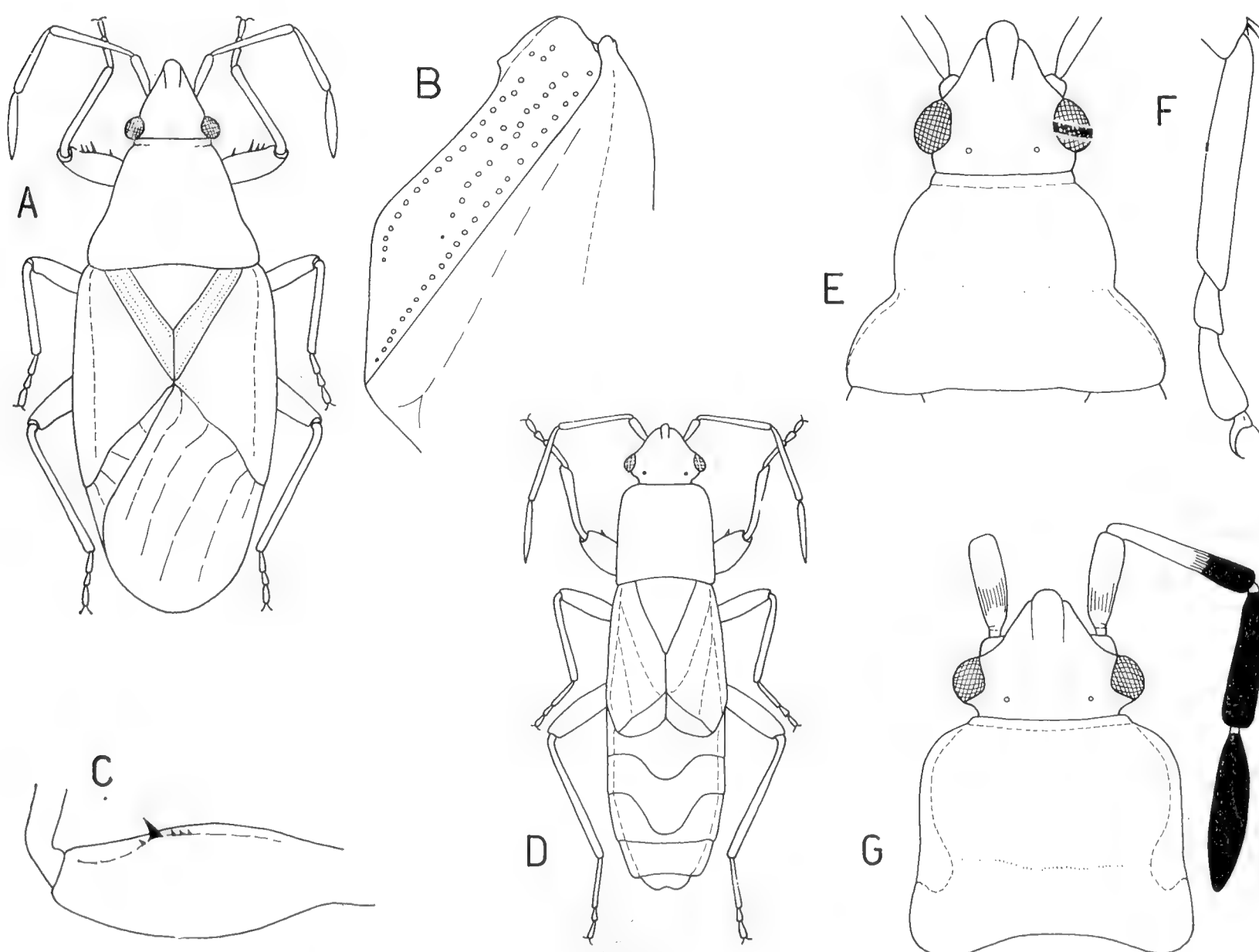


Fig. 48: A, B, *Oxycareus lavaterae*; C, *Microplax albofasciata*; D, *Pterotmetus staphyliniformis*; E, F, *Pachybrachius fracticollis*; G, *Scolopostethus thomsoni*.

Famiglia XXII. **Phymatidae** (Fimatidi; 1 genere, 1 specie)

Testaceo castaneo con le regioni superiori concave. Tibie anteriori e primo articolo dei tarsi trasformato in organo di presa. Pronoto con due carene longitudinali con alcuni piccoli granuli. Lungh. mm 7-9 (Fig. 41 G). *Phymata crassipes* (F.)
Euro-sibirico - anatolico - maghrebina (rara a Nord, comune a Sud); tutta Italia e isole, su fiori e cespugli dove caccia altri insetti.

Famiglia XXIII. **Tingidae** (Tingidi; 17 generi, 76 specie)

Tutti i nostri Tingidi sono fitofagi ed alcuni assai dannosi alle colture.

1. Pronoto o prolungamento posteriore del pronoto con 1-3 carene longitudinali (Fig. 5 B). Emielitre con celle (Fig. 43 G) 2
— Tutto il pronoto privo di carene. Pronoto senza coste e celle distinte *Agramma* Westw. (6 specie)
Corpo parallelo, capo nero, pronoto nero con il collare chiaro, emielitre giallo-brunice. Lungh. mm 1,8-2,4 (Fig. 42 A) *A. laetum* (Fall.)
Sudeuropea - anatolica; pressoché in tutta Italia in luoghi umidi o palustri.
2. Buccule (parti tratteggiate della Fig. 42 E, capo visto da sotto) anteriormente staccate 3
— Buccule congiunte anteriormente in modo da coprire la inserzione del rostro (Fig. 42 F) 5
3. Angoli anteriori del pronoto non prolungati oltre gli occhi. Area discoidale e subcostale delle emielitre (Fig. 42 B) piana o a conca (Fig. 42 C) 4
— Angoli anteriori del pronoto prolungati oltre gli occhi. Area discoidale e subcostale convessa a tetto o a vescica. Area marginale del pronoto con una fila di maglie. Capo con 5 spine semierette (Fig. 42 E) *Galeatus* Curtis (2 specie)
Corpo rettangolare con le larghe maglie del pronoto e delle emielitre trasparenti: vene castanee. Carene laterali del pronoto espanse verticalmente in una grande membrana arrotondata e convessa verso l'esterno. Lungh. mm 2,5-3,5 *G. spinifrons* (Fall.)
Europea centrosettentrionale orientale; Italia settentrionale.
4. Terzo articolo delle antenne sottile, allungato; quarto più grosso dell'estremità del 3° (Fig. 43 A). Porzione anteriore del pronoto sollevata a tetto sopra il capo *Acalypta* Westw. (8 specie)
Corpo piatto, ovale, giallo-grigio, capo quasi nero. Reticolato dell'area discoidale con 5-6 piccole maglie (Fig. 42 C, D, porzione media della emielitra a maggiore ingrandimento). Lungh. mm 2-3 *A. musci* (Schr.)
Medioeuropeo - pontica; Italia settentrionale e centrale.
— Terzo articolo delle antenne grosso e tubercolato (Fig. 43 F); 4° articolo robusto quanto il terzo (Fig. 43 E) *Kalama* Puton (diverse specie)
Corpo ovale allungato, grigio-cenere; capo nero con due spine pure nere. Area marginale del pronoto con 3 celle. Lungh. mm 3 *K. tricornis* (Schr.)
Euro-sibirica mediterraneo-turanica; tutta Italia e Sicilia.
5. Area discoidale e subcostale piana o debolmente convessa 6
— Aree centrali del corio, nella parte anteriore, convesse a modo di vescica *Stephanitis* Stal (1 specie)
Capo nero, antenne e zampe gialle; maglie del pronoto e delle emielitre trasparenti (Fig. 43 G). Emielitre con due fasce trasverse brune. Lungh. mm 3 *S. pyri* (F.)
Medioeuropea mediterraneo-turanica; comune in tutta Italia e isole, citata spesso per i danni che causa ai peri ed ai meli.
6. Pronoto con tre carene bene distinte almeno posteriormente 7
— Pronoto provvisto solo di una carena mediana *Monosteira* Costa (4 specie)
Corpo glabro, giallo-grigio sopra, pressoché nero sotto; lungo circa 2,5 volte la larghezza del pronoto; questo ha una dilatazione, piatta, nell'angolo anteriore che

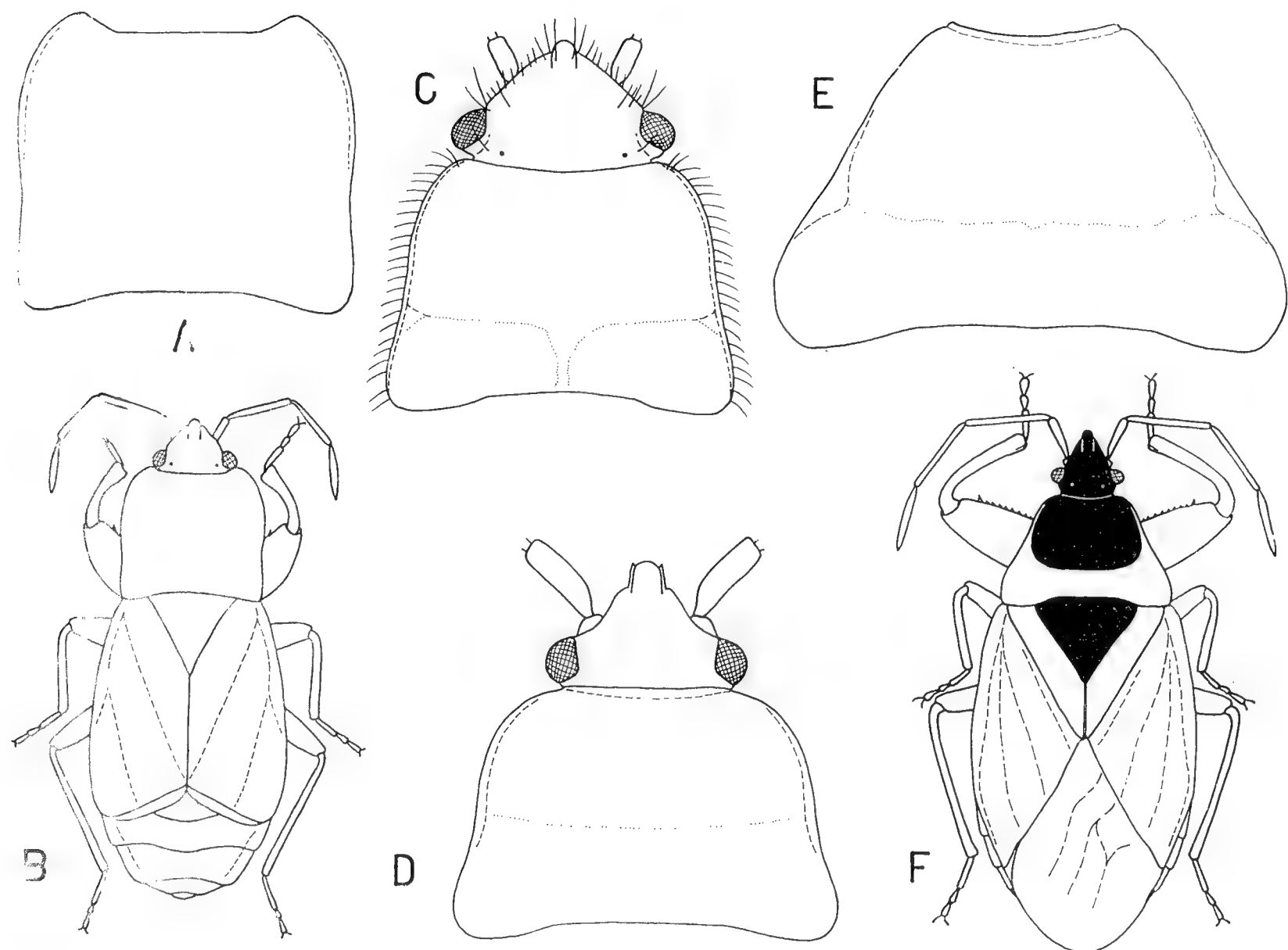


Fig. 49: A, B, *Plinthisus brevipennis*; C, *Pionosomus depressus*; D, *Drymus sylvaticus*; E, F, *Gastrodes grossipes*.

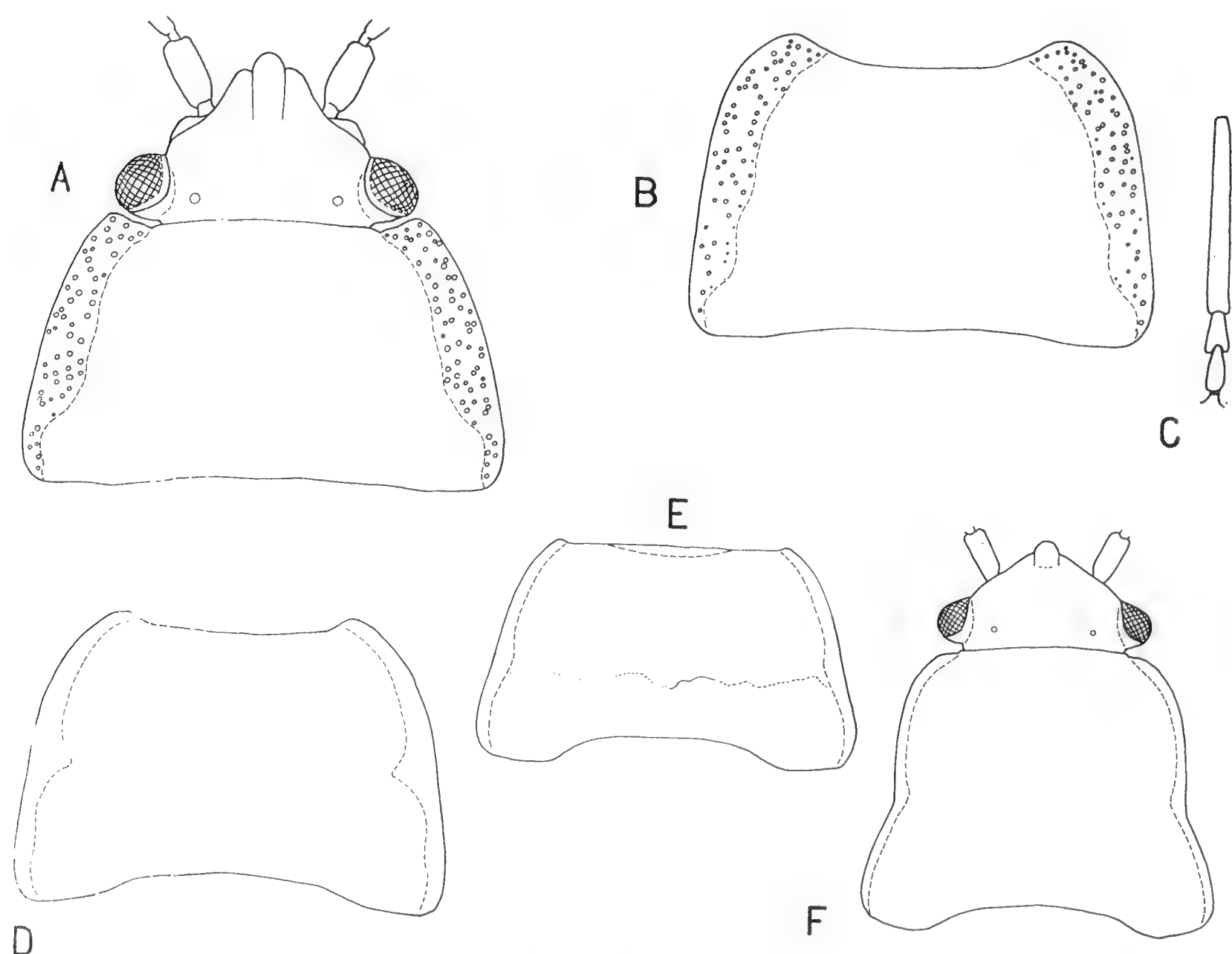


Fig. 50: A, *Gonianotus marginepunctatus*; B, C, *Emblethis verbasci*; D, *Aphanus rolandri*; E, *Trapezonotus dispar*; F, *Megalonotus praetextatus*.

7. Area marginale del pronoto distesa orizzontalmente (Figg. 43 H, 44 A, C) 8
 — Area marginale del pronoto ripiegata sul pronoto stesso (Figg. 44 D, E) 10
8. Antenne sottili (Fig. 43 B). Vescicola del collare breve.
 a. Margine del pronoto e delle emielitre liscio o con peli morbidi *Tingis* F. (v. dopo)
 b. Margine delle emielitre e talvolta del pronoto con una serie di spine con un pelo terminale (Fig. 43 H) *Lasiacantha* Stal (2 specie)
- Antenne ingrossate (Fig. 43 C, D) 9
9. Terzo e quarto articolo delle antenne grossi, cilindrici di uguale diametro e posti sullo stesso asse (Fig. 43 C) *Catoplatus* Spin. (5 specie)
 Corpo piatto, cuneiforme, giallo-grigio, capo nericcio. Antenne gialle con l'ultimo articolo nero. Area costale delle emielitre con un reticolo di 3-4 maglie. Lungh. mm. 4 *C. fabricii* (Stal)
 Europea centrosettentrionale; Italia settentrionale e appenninico montana.
- Terzo articolo delle antenne ingrossato, cuneiforme; quarto pure ingrossato, ovale e curvato verso l'esterno (Fig. 43 D) *Copium* Thunb. (4 specie)
 Corpo giallo-grigio o castaneo chiaro, capo e antenne nere. Antenne coperte da lunghi peli, forma come in Fig. 43 D. Lungh. mm 3-4 *C. clavicorne* (L.)
 Europea centromeridionale anatolica; Italia settentrionale, centrale e Sardegna, nei fiori di teucro.
10. Area subcostale delle emielitre, nella parte posteriore, più ristretta che nel mezzo (Fig. 43 I) 11
 — Area subcostale delle emielitre, in prossimità della punta estrema dell'area discoidale, allargata ad angolo, dove raggiunge la massima larghezza (Fig. 43 L) *Dictyla* Stal (5 specie)
 Corpo superiormente grigio, sotto nero, ovale, senza spine. Area marginale del pronoto, sul lato interno, concava. Lungh. mm 3,2-3,7 *D. echii* (Schr.)
 Eurosibirica mediterraneo-turanica; tutta Italia e isole, su *Echium*.
11. Area marginale del pronoto stretta (Fig. 44 E) *Physatocheila* Fieb. (4 specie)
 Parti superiori castanee, capo o regioni inferiori del torace nere, ventre bruno. Area subcostale delle emielitre con due maglie. Lungh. mm 3 *P. dumetorum* (H. S.)
 Medioeuropea e mediterraneo-atlantica; gran parte d'Italia e Sicilia.
- Area marginale del pronoto allargata fino alla carena mediana (Fig. 44 D) *Onchochila* Stal (2 specie)

Genere *Tingis* F. (19 specie)

1. Area marginale del pronoto larga, piatta, inclinata leggermente verso l'alto. Vescica del collare con il margine anteriore prominente in punta (Fig. 44 A) 2
 — Area marginale del pronoto stretta e piegata verticalmente in alto. Vescica del collare con il margine anteriore troncato. Corpo ovale, giallo chiaro o grigio, glabro; capo nero. Area discoidale concava. Lungh. mm 3 *T. maculata* (H. S.)
 Medioeuropea-meridionale; Italia settentrionale.
2. Margini e carene del pronoto e delle emielitre glabri o al più con brevissimi peli, più brevi del diametro degli occhi 3
 — Margini e carene del pronoto e delle emielitre con setole o peli lunghi. Area marginale del pronoto con 3 serie di maglie (Fig. 44 C). Corpo ovale, bianco-grigio. Lungh. mm 4 *T. reticulata* (H. S.)
 Europea centromeridionale; Italia settentrionale.
3. Margine laterale del pronoto incavato. Area costale con 3 file di maglie. Corpo ovale, grigio-bruno o giallo. Lungh. mm 3-4 *T. auriculata* (Costa)
 Mediterraneo-turanica; tutta Italia e isole.
- Margine laterale del pronoto diritto o convesso. Area marginale del pronoto e costale delle emielitre con 3 file di maglie. Corpo ovale, giallo-grigio con macchie nerice (Figg. 44 A, B, porzione media dell'emielitra). Lungh. mm 3-4 *T. cardui* (L.)
 Euroasiatico-maghrebina; tutta Italia e isole, su carduacee.

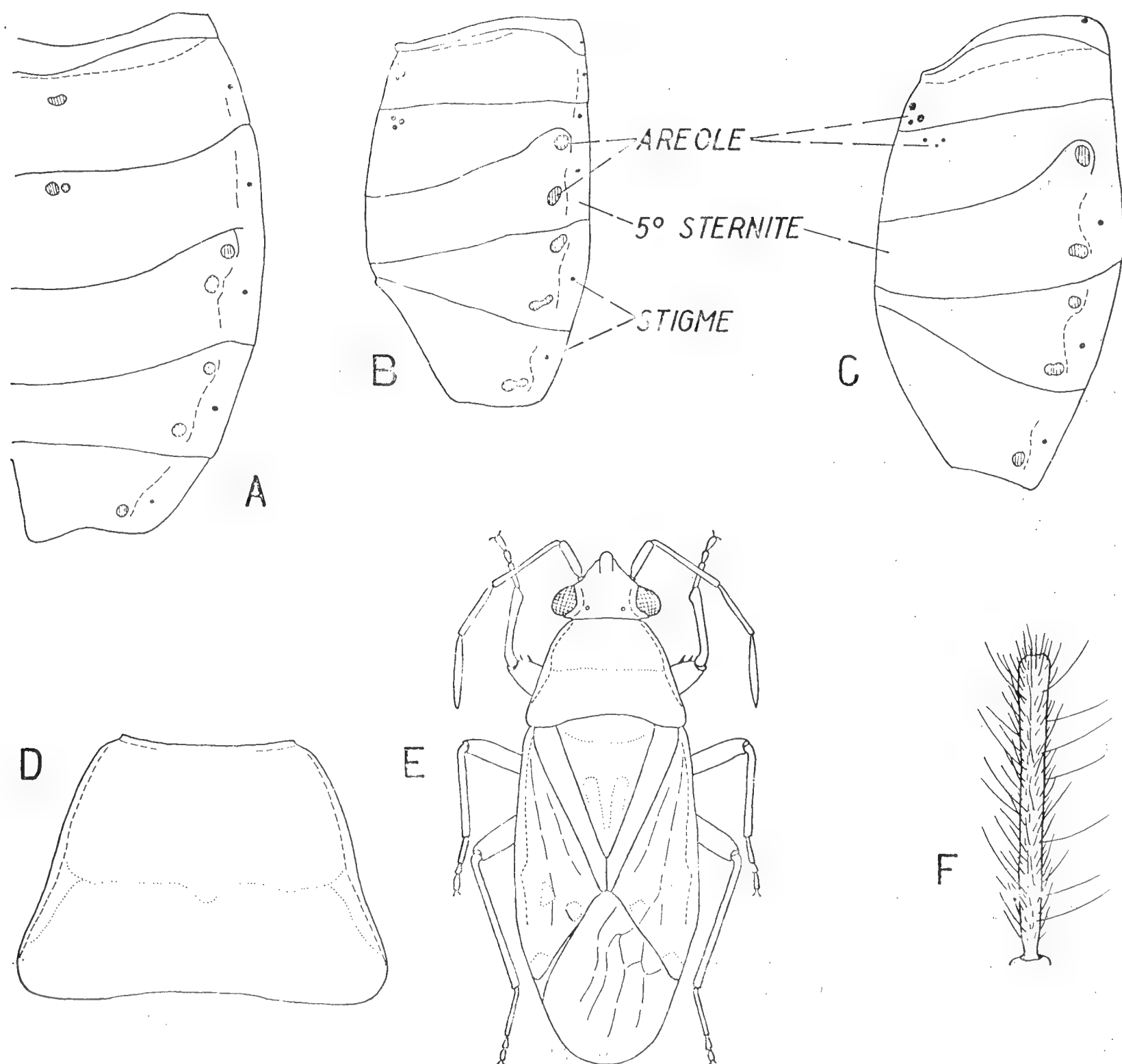


Fig. 51: A, *Gastrodes grossipes*; B, *Stygnocoris fuligineus*; C, *Rhyparochromus vulgaris*; D, E, *Perytrechus gracilicornis*; F, *Lasiocoris anomalus*.

Famiglia XXIV. **Aradidae** (Aradidi; 4 generi, 24 specie)

Specie con corpo straordinariamente appiattito e adattato alla vita sotto la corteccia degli alberi, sotto i sassi e nei polipori.

1. Scutello triangolare. Emielitre con la membrana chiaramente distinta dal corio. Capo dietro gli occhi largo quanto anteriormente *Aradus* F. (20 specie)
 - a. Corpo castaneo chiaro, emielitre spesso abbreviate. Forma del pronoto e delle antenne come in Fig. 44 G. Lungh. mm 3 - 5 *A. cinnamomeus* Panz.
Europea; tutta Italia, sotto la corteccia dei pini dove succhia la linfa.
 - b. Corpo castaneo-nero. Forma del pronoto e delle antenne come nella Fig. 44 F. Lungh. mm 8 - 10 *A. crenatus* Say.
Oloartica; tutta Italia, nei polipori del faggio.
 - c. Corpo nero. Forma del pronoto e delle antenne come nella Fig. 5 I. Lungh. mm 5 - 6,5 *A. frigidus* Kir.
Euroboreoalpina; Appennino centrale, Alpi piemontesi, sotto le pietre a contatto di globularia ed eliantemo.
- Scutello semiovale o semicircolare. Membrana fusa con il corio. Capo dietro agli occhi allargato *Aneurus* Curtis (2 specie)

Corpo castaneo lucente. Scutello della femmina semiovale (Fig. 44 H) e del maschio semicircolare. Forma del corpo e posizione delle stigme in Fig. 44 H *A. laevis* (F.)
Europea orientale - anatolica; sotto la corteccia di vecchi pali e tronchi in quasi tutte le regioni italiane.

Famiglia XXV. **Berytidae** (Beritidi; 7 generi, 19 specie)

Hanno corpo parallelo, zampe e antenne molto lunghe e sottili. Per quanto è noto vivono prevalentemente di piccoli insetti che trovano fra le graminacee o su determinate piante.

1. Scutello triangolare, semplice, privo di spine (*Berytinae*, Figg. 45 A, B) 2
- Scutello con forma varia e provvisto di una spina (*Metacanthinae*, Fig. 45 C, D) 3
2. Rostro proteso fino alle coxe medie, antenne lunghe quanto il corpo
Neides Latr. (2 specie)
- Rostro proteso fino alle coxe anteriori; antenne distintamente più brevi del corpo (Fig. 45 A) *Berytinus* Kirk. (10 specie)
- Membrana con le due nervature interne, a poca distanza dalla base, congiunte per un breve tratto. Primo articolo delle antenne e dei femori gradatamente ingrossato all'estremità e privo di peli (Figg. 45 A, B). Corpo giallo paglia. Lungh. mm 5
B. montivagus (Mey.)
- Medioeuropea olomediterraneo - turanica; tutta Italia e Sardegna, in luoghi soleggiati fra le graminacee.
3. Pronoto allungato con porzione posteriore convessa (Fig. 45 C, pronoto e scutello di lato) *Metacanthus* Costa (1 specie)
- Corpo giallo chiaro; capo con una fascia nera ai lati. Lungh. mm 8 - 9
M. meridionalis Costa
- Sudeuropeo - anatolica; Italia appenninica, su epilobio.
- Pronoto campaniforme e con due apofisi arrotondate negli angoli posteriori (Fig. 45 D) *Gampsocoris* Fuss (3 specie)
- Corpo giallo - cenere, capo nero; primo e secondo articolo delle antenne con anelli scuri; spina dello scutello sinuosa (Figg. 45 D, E). Lungh. mm 3,5 - 4,5
G. punctipes (Germ.)
- Euromediterranea; tutta Italia ed isole, su Ononis.

Famiglia XXVI. **Piesmidae** (Piesmidi; 1 genere, 6 specie)

Vivono specialmente sulle Chenopodiacee; in qualche regione riescono dannose alle barbabietole da zucchero.

1. Pronoto con due carene mediane (Fig. 45 G) e area marginale con due o tre maglie (Fig. 45 F). Corpo parallelo, piatto, giallo con alcune macchie grigie; scutello e parti inferiori pressoché nere. Lungh. mm 3 *Piesma maculata* (Lap.)
- Euroasiatica mediterranea - occidentale; tutta Italia e isole.
- Pronoto con tre carene, di forma trapezoidale e con i margini laterali diritti. Scutello nero con la punta bianca; colori delle altre parti del corpo come nella precedente. Lungh. mm 3,5 *P. quadrata* (Fieber)
- Eurosibirico - turanico - tirrenica; tutta Italia e Sardegna.

Famiglia XXVII. **Pyrrhocoridae** (Pirrocoridi; 2 generi, 3 specie)

1. Due ultimi articoli delle antenne pressoché uguali; addome nero eccetto i segmenti genitali *Pyrrhocoris* Fall. (2 specie)
- Nero con il pronoto, il corio, i connexivi ed i segmenti genitali rossi. Pronoto ed emielitre hanno delle macchie nere come indicato nella Fig. 45 H. Lungh. mm 10 - 12
P. apterus (L.)
- Euroasiatica; la forma macrottera è rara, la brachittera è molto comune, specie sui tigli, in tutta Italia e isole.
- Quarto articolo delle antenne molto più lungo del terzo; addome almeno in parte rosso *Scantius* Stal (1 specie)
- Nero con il pronoto rosso e macchia nera come nell'*apterus*; corio rosso con una macchia puntiforme nel mezzo. Solo nella forma macrottera. Lungh. mm 8 - 10
S. aegyptius (L.)
- Mediterraneo - turanica; comune nell'Italia appenninica e isole.

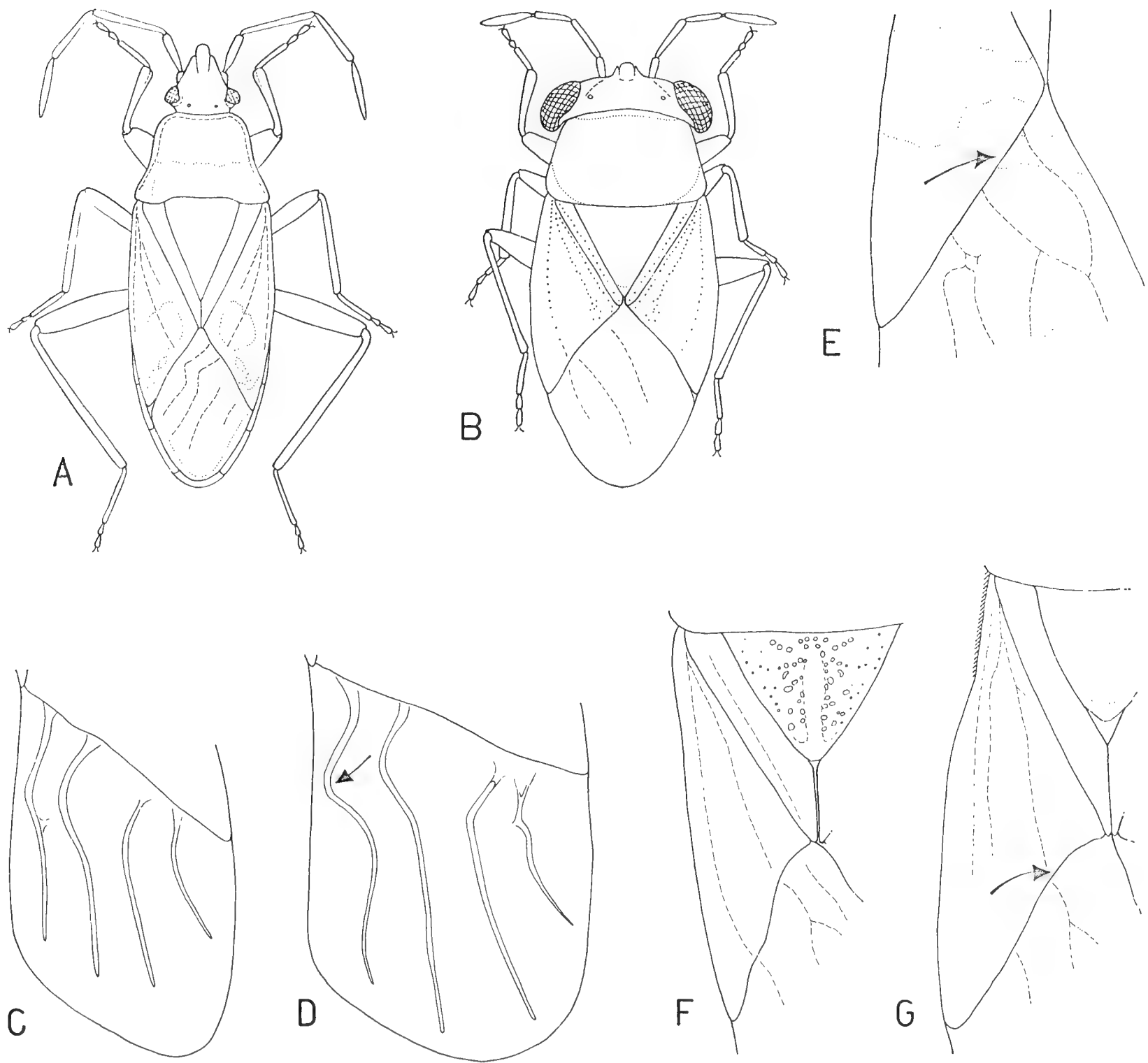


Fig. 52: *Lasiocoris anomalus*; B, *Geocoris sculus*; C, *Aphanus rolandri*; D, *Aellopus atratus*; E, *Lygaeus*; F, *Ortholomus punctipennis*; G, *Nysius graminicola*.

Famiglia XXVIII. **Lygaeidae** (Ligeidi; 73 generi, 211 specie)

Occupano il secondo posto per numero di generi e specie. Si trovano negli ambienti più diversi; ma in modo particolare sul suolo e su piante erbacee. Vivono di succhi vegetali, pochi di caccia, alcuni riescono dannosi alle colture.

- 1. Margine anteriore del 4° sternite visibile (corrisponde in realtà al 5°) raccorciato e spesso curvato a uncino (Figg. 51 A, B, C) (VII. sottofam. *Rhyparochrominae* Stal, 41 generi) 21
 - Lato anteriore e posteriore di tutti gli sterniti visibili corrente regolarmente fino al margine laterale dell'addome (Fig. 53 A) 2
 - 2. Porzione anteriore del pronoto con un profondo incavo trasverso, sinuoso o diritto, tutto o in parte nero (Figg. 46 A B, 53 B C) (I. sottofam. *Lygaeinae* Stal, 11 generi) 3
 - Porzione anteriore del pronoto priva di solco trasverso, di rado vi è un disegno simile al solco 10
 - 3. Costa che divide corio e membrana diritta (Fig. 52 E) 4
 - Costa tra corio e membrana sinuosa (Figg. 52 F G) 7
 - 4. Occhi a contatto con il margine anteriore del pronoto (Figg. 46 B, 53 B C) 5
 - Occhi distanti dal margine anteriore del pronoto (Fig. 46 A)
- Arocatus* Spin. (3 specie)

- Capo e torace in gran parte neri; pronoto rosso con una macchia ad M (Fig. 46 A); corio rosso e nell'ultimo terzo nero; rostro fino alle coxe medie. Lungh. mm 6 - 7
A. melonocephalus (F).
 Nordmediterranea - sudeuropeo - anatolica; Italia settentrionale, Sicilia e Sardegna.
5. Carena mediana del pronoto prolungata fino al margine anteriore (Fig. 46 B)
Tropidothorax Bergr. (1 specie)
 Corpo in gran parte nero con macchie rosse eccetto pronoto e corio che sono in prevalenza rossi. Lungh. mm 9 - 10
T. leucopterus (Gz.)
 Europea centromeridionale - estmediterraneo - centroasiatica; tutta Italia.
- Carena mediana del pronoto nettamente staccata dal margine anteriore o assente 6
6. Capo nero con macchie rosse
Lygaeus F. (v. dopo)
 Capo completamente nero
Melanocoryphus Stal (v. dopo)
7. Scutello con l'estremità molto arrotondata (Fig. 47 E); emielitre brachittere, di rado macrottere
Nithecus Horv. (1 specie)
 Corpo castaneo grigio. Lunghezza mm 3,5 - 5,5
N. jacobae Schill.
 Eurosibirica, montana nel Sudeuropa; Italia sett. montana e Puglie (Gargano).
- Scutello appuntito (Figg. 52 F, G); emielitre solo macrottere 8
8. Clavo con punteggiatura debole e disposta irregolarmente 9
- Clavo con punteggiatura profonda e disposta in linee pressoché regolari (Fig. 46 C)
Kleidocerys Westw. (2 specie)
 Corpo rosso castaneo chiaro, membrana trasparente, incavo distale del pronoto nero. Lungh. mm 3,5 - 4,0
K. ericae (Horv.)
 Atlantica - ovestmediterranea settentrionale; Italia e grandi isole, comune su erica, calluna e alno.
9. Margine esterno del corio pressoché diritto; corpo con peluria lunga ed eretta
Ortholomus Stal (1 specie)
 Corpo parallelo, castaneo chiaro con punteggiatura nera (Fig. 52 F). Lungh. mm 4,5 - 6,0
O. punctipennis (H. S.)
 Euromediterranea; tutta Italia e Sicilia.
- Margine esterno del corio presso la base stretto, diritto (Fig. 52 G); peluria breve e coricata
Nysius Dall. (v. dopo)
10. Corpo giallastro, ovale, allungato (Fig. 46 D); punteggiatura profonda, uniforme, serrata (Fig. 46 E). Scutello o almeno la parte anteriore del pronoto con carena longitudinale chiara. Lunghezza mm 2 - 5 (II. sottofam. *Cyminae* Stal, 2 generi) 11
- Corpo con altri caratteri 12
11. Primo articolo delle antenne più breve del capo; secondo art. lungo circa la metà del terzo
Cymodema Spin. (1 specie)
- Primo articolo delle antenne lungo quanto il capo; secondo più lungo del terzo o almeno quanto i due terzi della sua lunghezza
Cymus Hahn (4 specie)
 Secondo articolo delle antenne di poco più lungo del terzo; scutello con una breve carena bianca mediana all'estremità. Lungh. mm 4,5 (Figg. 46 D, E)
C. glandicolor Hahn
 Eurosibirico - maghrebina irano - turanica; Italia e Sardegna, nei prati paludosi.
12. Capo breve, occhi fortemente sporgenti (Figg. 47 A, 52 B) 13
- Occhi molto meno sporgenti, capo più lungo in rapporto alla larghezza (Figg. 47 B F, 48 A, 53 E) 16
13. Occhi sferici peduncolati; clavo prolungato oltre lo scutello circa tanto quanto lo scutello (Fig. 47 A). Lunghezza mm 4 - 6 (III. sottofam. *Henestarinae* Stal, 2 generi) 14
- Occhi ovali sporgenti, ma non peduncolati; clavo non prolungato oltre lo scutello (Fig. 52 B) (IV. sottofam. *Geocorinae* Stal, 2 generi) 15
14. Corpo breve e ovale, lungo circa 2,2 volte la massima larghezza
Engistus Fieb. (1 specie)
- Corpo più allungato e parallelo, lungo circa 3,3 volte la massima larghezza
Henestaris Spin. (3 specie)
 Corpo giallo - grigio con macchie castanee. Terzo e quarto articolo delle antenne uguali. Lungh. mm 5 - 6 (Fig. 47 A)
H. laticeps (Curt.)
 Olomediterraneo - atlantica; Italia appenninica e isole, in luoghi soleggiati e sabbiosi.
15. Capo completamente chiaro: giallo o arancio
Piocoris Stal (1 specie)
- Capo almeno in parte nero
Geocoris Fall. (v. dopo)

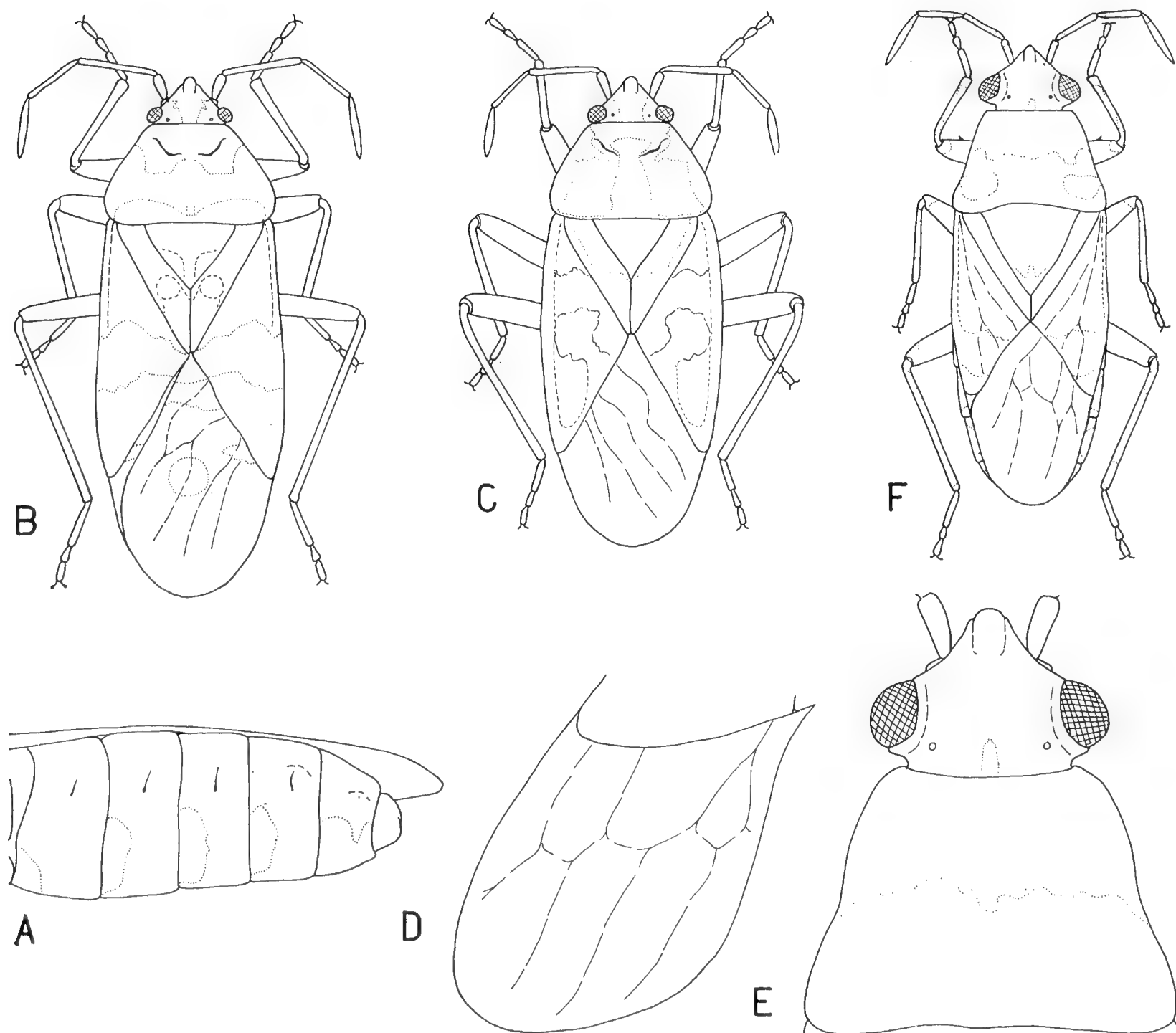


Fig. 53: A, B, *Lygaeus equestris*; C, *Lygaeus saxatilis*; D, *Heterogaster affinis*; E, F, *Heterogaster cathariae*.

16. Membrana delle emielitre con 4-5 vene non ramificate, ma collegate, poco dopo la base, da linee trasverse che isolano delle celle poligonali (Fig. 53 D). Lunghezza mm 4-7 (V. sottofam. *Heterogastrinae* Stal, 2 generi) 17
- Membrana delle emielitre con le vene pressoché diritte, non collegate da linee trasverse (Fig. 47 C). Lunghezza mm 2-5 (VI. sottofam. *Oxycareninae* Stal, 8 generi) 18
17. Femori anteriori con una piccola spina; margine laterale del pronoto incavato (Fig. 47 B) *Platyplax* Fieb. (2 specie)
- Capo, antenne e sterniti toracici neri con poche macchiette chiare; pronoto ed emielitre giallo chiaro cosparse di piccole macchie nere. Lungh. mm 6-6,5 (Fig. 47 B)
- P. salviae* (Schill.)
- Medioeuropeo - sudmediterranea; tutta Italia e isole.
18. Femori anteriori con due o più robuste spine 19
- Femori anteriori con una robusta spina ed altre molto piccole (Fig. 48 C) *Microplax* Fieb. (3 specie)
- Corio nero con una fascia bianca trasversa nel mezzo. Lungh. mm 2,5-3,0
- M. albofasciata* (Costa)
- Mediterranea; tutta Italia e Sardegna
19. Tubercoli antennali come in Fig. 47 F; rostro fino alle coxe medie *Metopoplax* Fieber (3 specie)
- Clipeo molto prominente ed allargato (Fig. 47 F). Corpo parallelo, nero; emielitre chiare con nervature oscure. Lungh. mm 3,7 *M. ditmoides* (Costa)
- Mediterranea occidentale - atlantica; Italia appenninica e grandi isole.
- Tubercoli antennali non curvati verso l'esterno; rostro fino alle coxe posteriori 20

20. Clavo con punteggiatura sparsa, irregolare (Fig. 47 D) *Macroplax* Fieb. (2 specie)
 Capo nero; pronoto giallo - castaneo con una larga fascia anteriore trasversa nera;
 emielitre bianco gialle con una macchia mediana e venature nere; regioni inferiori
 castaneo - nere. Lungh. mm 4 *M. fasciata* (H. S.)
 Medioeuropea - sudmediterraneo - turanica; tutta Italia e isole.
- Clavo con file regolari di punti (Fig. 48 B) *Oxycarenus* Fieber (5 specie)
 Antenne, capo, pronoto e scutello completamente neri; emielitre castaneo - nere con
 il corio rosso e la membrana ialina. Lungh. mm 5 - 6 (Fig. 48 A) *O. lavaterae* (F.)
 Mediterranea occidentale - macaronesica; in gran parte d'Italia e Sardegna.
21. Pronoto con il margine laterale diritto o convesso o un poco sinuoso (rientrante nel
 mezzo) (Figg. 48 G, 49 A - F, 50 A - F) 22
- Margine laterale del pronoto, in corrispondenza dell'incavo trasverso mediano, forte-
 mente rientrante (Fig. 48 E); metà anteriore del pronoto molto convessa. Primo ar-
 ticolo dei tarsi lungo circa il doppio del secondo più il terzo (Fig. 48 F)
Pachybrachius Hahn (4 specie)
 Femori anteriori con due grandi spine. Primo ed ultimo articolo delle antenne nero.
 Corpo nero, metà posteriore del pronoto, emielitre e zampe castanee. Lungh. mm
 5 - 6 (Figg. 48 E, F) *P. fracticollis* (Schill.)
 Nordeuropea - sudeuropea orientale; Italia sett., su erbe di zone palustri.
22. Margine laterale del pronoto, dall'angolo anteriore al posteriore, con un orlo lamel-
 lare rivolto in fuori (Figg. 49 C, 50 A B C D E F, 51 D, 54 D E) 29
- Margine laterale del pronoto privo di orlo lamellare o questo è presente nella metà
 anteriore o solo nel mezzo (Figg. 48 G, 49 A B C D E F) 23
23. Quinto sternite provvisto lateralmente di due areole opache poste ambedue nella pri-
 ma metà, cioè prima dello stigma (Fig. 51 A, osservare l'addome di lato) 26
- Areole laterali del 5° sternite più distanziate e poste una anteriormente e l'altra po-
 steriormente allo stigma (Figg. 51 B, C) (l'areola posteriore, con lente a forte in-
 grandimento, può apparire composta di due areole contigue) 24
24. Tutti gli stigmi sono disposti ventralmente (Fig. 51 B) 25
- Almeno uno stigma, il 4°, non è visibile lateralmente perché spostato sul dorso (Fig.
 51 C): vedi n. 22 29
25. Femori anteriori con una o più spine *Plinthisus* (Fieb.) (9 specie)
 Femori anteriori con due spine. Emielitre della forma brachittera (la più frequente)
 con la membrana ridotta a una fine orlatura. Corpo castaneo - nero. Lungh. mm
 2,7 - 3,3 *P. brevipennis* (Latr.)
 Euromediterraneo - turanica; tutta Italia e isole.
- Femori anteriori senza spine. Pronoto punteggiato densamente su tutta la superficie.
 Clavo con 4 file di punti *Stygnocoris* Dgl. Sc. (6 specie)
 Corpo nero - castaneo con peli assai brevi; metà posteriore del pronoto più chiara.
 Primo articolo dei tarsi posteriori lungo quanto i due seguenti uniti. Lungh. mm
 2,5 - 3,0 (Fig. 51 B) *S. fuliginus* (Geoff.)
 Eurosibirica ovestmediterraneo - turanica; tutta Italia e isole.
26. Corpo molto appiattito; connexivi orizzontali *Gastrodes* Westw. (2 specie)
 Corpo castaneo - rossiccio; capo e parte anteriore del pronoto neri. Primo articolo
 delle antenne oltrepassante il capo con metà della sua lunghezza. Lunghezza mm
 7,0 - 7,5 (Figg. 49 E, F) *G. grossipes* (De G.)
 Eurosibirica tirrenico - anatolica; Italia sett., Puglie e Sicilia.
- Corpo inferiormente convesso; connexivi rivolti in alto 27
27. Margine laterale del pronoto, all'altezza dell'incavo trasversale, distintamente appiat-
 tito (Fig. 48 G) 28
- Margine laterale del pronoto stretto, sottile anche all'altezza dell'incavo trasverso
 (Fig. 49 D). Occhi a contatto del pronoto. Capo opaco *Drymus* Fieb. (5 specie)
 Corpo nero, emielitre castanee con strisce irregolari più chiare. Femori anteriori con
 due piccole spine. Lungh. mm 3,6 - 4,6 *D. sylvaticus* (F.)
 Ovestmediterranea eurosibirico - turanica; tutta Italia (incerta in qualche regione me-
 ridionale).
28. Corpo lungo mm 5,0 - 7,5. Primo articolo delle antenne oltrepassante il capo almeno
 per metà della sua lunghezza *Eremocoris* Fieb. (5 specie)

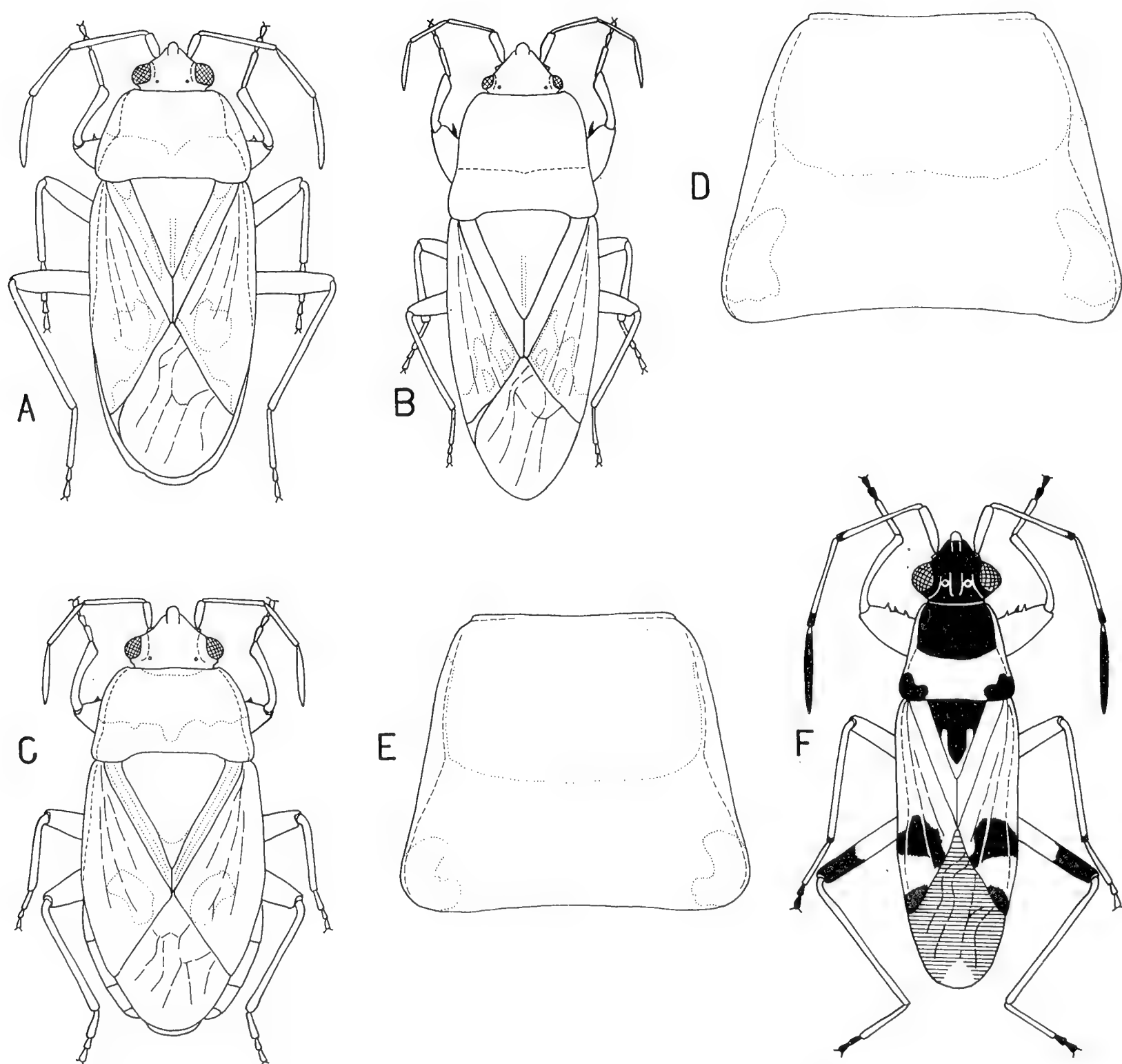


Fig. 54: A, *Rhyparochromus vulgaris*; B, *Megalonotus chiragra*; C, *Trapezonotus dispar*; D, *Beosus maritimus*; E, F, *Beosus quadripunctatus*.

Corpo castaneo, escluso antenne, capo metà anteriore del pronoto, parte posteriore delle emielitre, sterno e femori che sono neri. Femori anteriori con 2 spine lunghe e alcune molto brevi. Zampe con lunghi peli eretti. Lungh. mm 5 - 6 *E. plebejus* (Fall.) Europeo - anatolica; Italia sett. e alcune località montane appenniniche.

- Corpo non più lungo di mm 4,5. Primo articolo delle antenne molto più breve *Scolopostethus* Fieb. (8 specie)

Regioni superiori con peli molto brevi. Antenne gialle e nere come in Fig. 48 G. Corpo nero con la metà posteriore del pronoto castanea e ai lati bianchiccia, le emielitre sono giallo - castanee con la porzione posteriore nera. Comune la forma brachittera. Lungh. mm 3,5 - 4,0 *S. thomsoni* Reut. Euromediterraneo - macaronesica, neartica; Italia sett. e appenninica montana.

29. Pronoto con il margine laterale stretto, sottile, ridotto quasi a zero prima dell'angolo posteriore (Figg. 49 C, 51 B); all'altezza del solco trasverso, di rado si allarga verso l'interno 30
- Pronoto con il margine laterale distintamente visibile, da sopra, dall'angolo anteriore al posteriore (Figg. 50 A B D E F, 54 D E) 34
30. Femori anteriori con spine 31
- Femori anteriori privi di spine. Dorso con peluria adagiata, chiara, frammista a semieretta nera *Pionosomus* Fieb. (2 specie)

- Corpo nero. Antenne con il 1° e 4° articolo nero, il 2° e 3° castanei. Parte anteriore del pronoto nero lucente e posteriore con due macchie chiare. Emielitre giallo - castanee annerite posteriormente. Lungh. mm 2,5 (Fig. 49 C) *P. depressus* Horv. Appenninica; endemismo italiano.
31. Pronoto rettangolare o solo poco allargato posteriormente (Figg. 48 D, 50 F) 33
 — Pronoto distintamente trapezoidale (Figg. 51 D E, 52 A) 32
32. Parte anteriore del corpo con peluria breve e adagiata. Scutello con 2 macchie gialle all'estremità *Peritrechus* Fieb. (v. dopo)
 — Parte anteriore del corpo (comprese antenne e zampe) con lunghi peli eretti (esempio in Fig. 51 F, secondo art. antenne). Scutello completamente nero o solo con la punta più chiara *Lasiocoris* Fieber (4 specie)
 Corpo nero, metà posteriore del pronoto, esclusi gli angoli, ed emielitre giallo - castanee, queste ultime con una macchia nera nel corio. Non di rado il giallo è sostituito dal rossiccio. Lungh. mm 7,0 - 7,5 (Fig. 52 A) *L. anomalus* (Kol.) Nordmediterranea; tutta Italia e isole.
33. Corpo lungo almeno 4,5 volte la massima larghezza. Pronoto a forma di rettangolo o di quadrato *Pterotmetus* Am. & Serv. (1 specie)
 Corpo nero. Emielitre giallo - rosse, brachittere, di rado macrottere (Fig. 48 D) (ricorda i Coleotteri Stafilini). Lungh. mm 5,0 - 5,5 *P. staphyliniformis* (Schill.) Eurosibirica anatolico - turanica; Italia sett. e centrale.
 — Lunghezza del corpo non superiore a 3 volte la massima larghezza. Pronoto spesso con i lati un poco sinuosi (Fig. 50 F) *Megalonotus* Fieb. (v. dopo)
34. Orlo laterale del pronoto appiattito e con numerosi punti sparsi, neri (Fig. 50 A, B) 35
 — Orlo laterale del pronoto liscio o con punteggiatura indistinta o solo con una linea regolare di punti (vedi *Sphragisticus* al n. 37) 36
35. Margine anteriore del pronoto distintamente incavato (Fig. 50 B) *Emblethis* Fieb. (6 specie)
 — Corpo giallo - grigio con macchie puntiformi oscure. Forma del pronoto e rapporti di lunghezza dei tarsi posteriori come in Fig. 50 B, C. Peli marginali del pronoto molto brevi. Lungh. mm 5,5 - 7,7 *E. verbasci* (F.) Olopaleartica; tutta Italia e isole.
 — Margine anteriore del pronoto non incavato (Fig. 50 A) *Gonianotus* Fieb. (2 specie)
 Corpo giallo - grigio con piccole macchie oscure. Membrana delle emielitre bianchiccia con macchie oscure, vene castanee marginate di chiaro. Lungh. mm 4,9 - 5,6 *G. marginepunctatus* (Wolff) Eurosibirica irano - turanica, sonora; Italia settentrionale e centrale montana, Sardegna.
36. Antenne con il 2° e 3° articolo con lunghi peli eretti 37
 — Antenne solo con micropeluria adagiata 38
37. Lati del pronoto con peluria adagiata, breve; orlo stretto (Fig. 50 E) *Trapezonotus* Fieb. (v. dopo)
 — Lati del pronoto con una fila regolare di peli eretti, neri *Sphragisticus* Stal (1 specie)
 Corpo nero. Orlo anteriore e terzo posteriore del pronoto, emielitre e tibie giallo - castanee. Estremità dello scutello con due macchie coniche gialle. Lungh. mm 4,5 - 5,5 *S. nebulosus* (Fall.) Eurosibirico - turanico - maghrebina neartico - messicana; Italia alpina.
38. Occhi distintamente sporgenti oltre il margine anteriore del pronoto (Fig. 54 F) *Beosus* Am. & Serv. (v. dopo)
 — Occhi molto meno prominenti (Fig. 54 A) 39
39. Corpo, compreso pronoto ed emielitre (eccetto membrana), nero 40
 — Corpo con macchie chiare almeno sul corio *Rhyparochromus* Hahn (v. dopo)
40. Corpo ovale, lungo 3 volte la massima larghezza. Pronoto con i margini laterali, nella parte mediana, diritti. Membrana delle emielitre con le nervature moderatamente sinuose (Fig. 52 C) *Aphanus* Lap. (1 specie)
 Completamente nero con la membrana provvista di una macchia ovale arancio (talvolta poco visibile per la diffusione del grasso fra le ali e la membrana). Lungh. mm 7 - 8 *A. rolandri* (L.) Atlantica sudeuropeo - sudmediterraneo - centroasiatica; tutta Italia e isole.

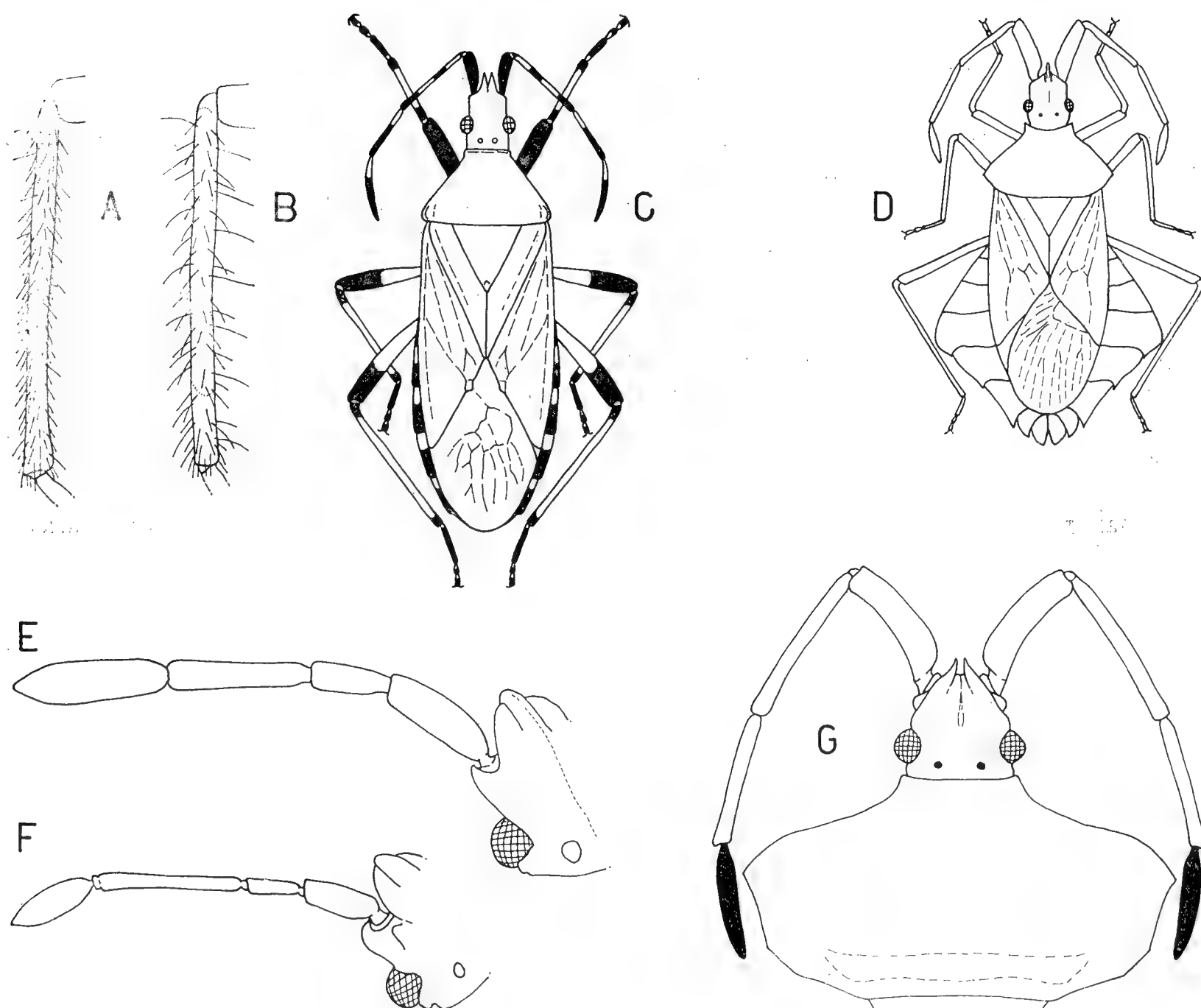


Fig. 55: A, *Dicranocephalus albipes*; B, *Dicranocephalus setulosus*; C, *Dicranocephalus agilis*; D, *Syromastus rhombeus*; E, *Ulmicola spinipes*; F, *Bathysolen nubilus*; G, *Coreus marginatus*.

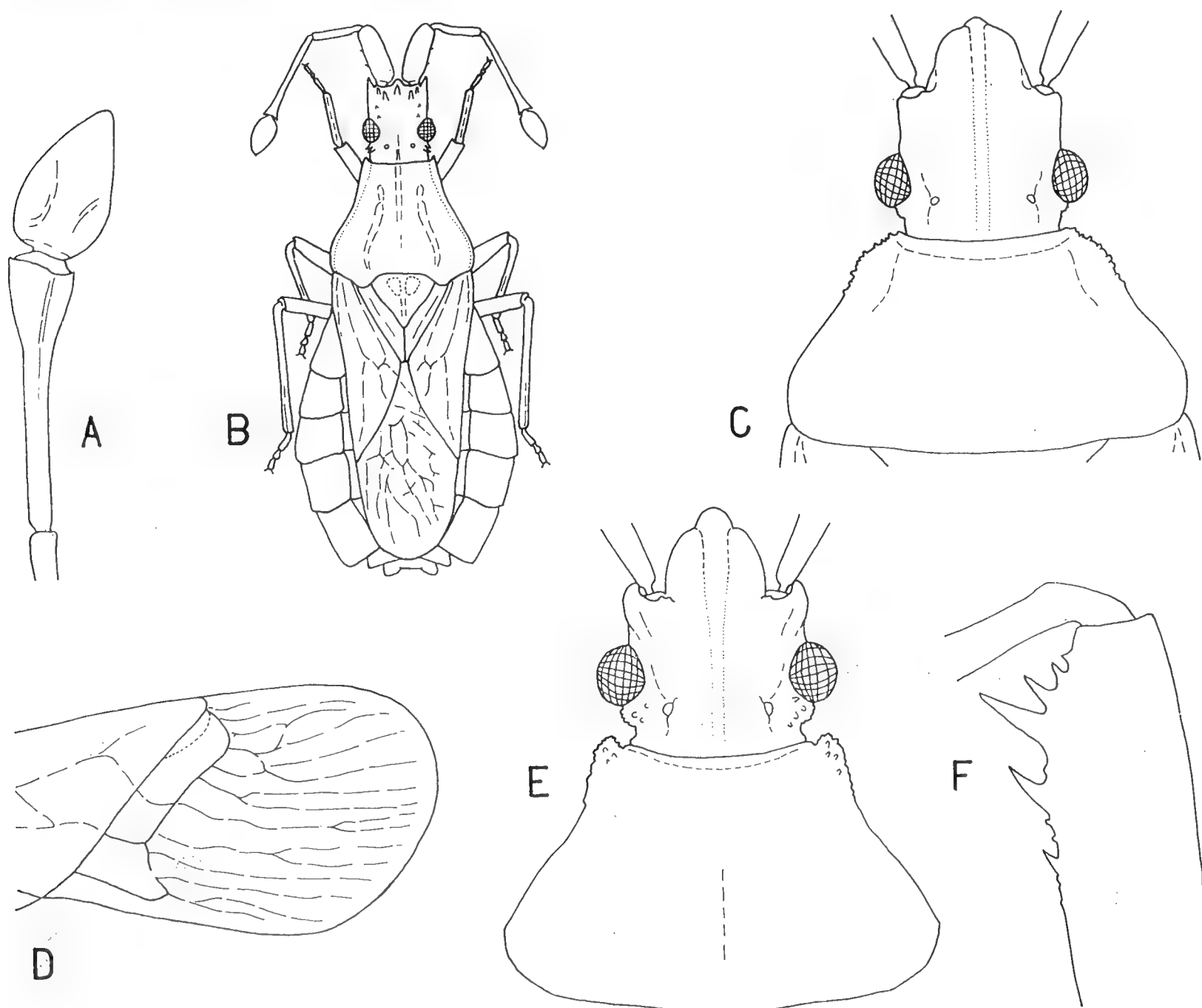


Fig. 56: A, B, *Spathocera dalmani*; C, *Ceraleptus obtusus*; D, E, F, *Ceraleptus gracilicornis*.

- Corpo ovale lungo circa 2 volte la massima larghezza. Margini laterali del pronoto uniformemente convessi. Membrana con le nervature molto più sinuose, specie la prima interna (Fig. 52 D) *Aellopus* Wolff (2 specie)
Completamente nero opaco compresa la membrana. Lungh. mm 7,5 - 8,5
A. atratus (Goeze)
Medioeuropeo - sudmediterranea irano - turanica; tutta Italia e isole.

Genere *Lygaeus* F. (5 specie)

Corpo in prevalenza rosso arancione con macchie nere nettamente delimitate; zampe e antenne nere. Su prati e pascoli in luoghi soleggiati.

- 1. Corio con il margine esterno nero. Lungh. mm 10 - 11 (Fig. 53 C) *L. saxatilis* (Scop.)
Sudeuropeo - sudmediterraneo centroasiatico - indiana; tutta Italia e isole.
- Corio non marginato di nero 2
- 2. Petto nero con grandi macchie rosse. Lungh. mm 12 - 14 *L. pandurus* (Scop.)
Euro - afro - indiana; Italia appenninica e padana, Sicilia, Sardegna.
- Petto completamente nero. Lungh. mm 9 - 13 (Fig. 53 B) *L. equestris* (L.)
Euromediterranea asiatico - indiana; tutta Italia.

Genere *Melanocoryphus* Stal. (3 specie)

Corpo rosso con macchie nere analoghe a quelle di *Lygaeus*; antenne nere, zampe variabili.

- 1. Margine anteriore del pronoto nero (sbg. *Melanocoryphus* s. str.). Lungh. mm 7 - 8
M. albomaculatus (Goeze)
Sudeuropea olomediterraneo - turanica; tutta Italia ed isole.
- Margine anteriore del pronoto rosso (sbg. *Horvathiolus* Jos.) 2
- 2. Metà anteriore del pronoto pressoché piana, punteggiata, opaca. Lungh. mm 4 - 5
M. superbus (Pol.)
Sudeuropea nordmediterraneo - turanica; tutta Italia e Sardegna.
- Metà anteriore del pronoto liscia, avanti alla macchia nera posteriore con una gibbosità trasversa lucente. Lungh. mm 4,2 - 4,7 *M. gibbicollis* (Costa)
Mediterranea occidentale; Italia meridionale e isole.

Genere *Nysius* Dall. (10 specie)

Corpo giallastro con punteggiatura nera e piccole macchie oscure. Su diverse piante erbacee.

- 1. Buccule (membrane che accompagnano il primo tratto del rostro, esempio Figg. 42 E, F) gradatamente ristrette posteriormente. Margine laterale del corio, in prossimità della base, peloso (Fig. 52 G) 2
- Buccule, viste di lato, di altezza costante. Margine del corio privo di peli. Lungh. mm 4,0 - 4,4 *N. senecionis* (Schill.)
Euroturanico - maghrebina, tutta Italia e isole.
- 2. Corio bianco - grigio con le venature macchiate di nero o castaneo; membrana bianchiccia. Lungh. mm 4,0 - 4,5 *N. thymi* (Wolff)
Oloartica, tutta Italia e Sardegna.
- Corio bianco - giallo, senza macchie; membrana ialina. Lungh. mm 4,0 - 4,7 (Fig. 52 G) *N. graminicola* (Kol.)
Olomediterraneo - turanica; tutta Italia e isole.

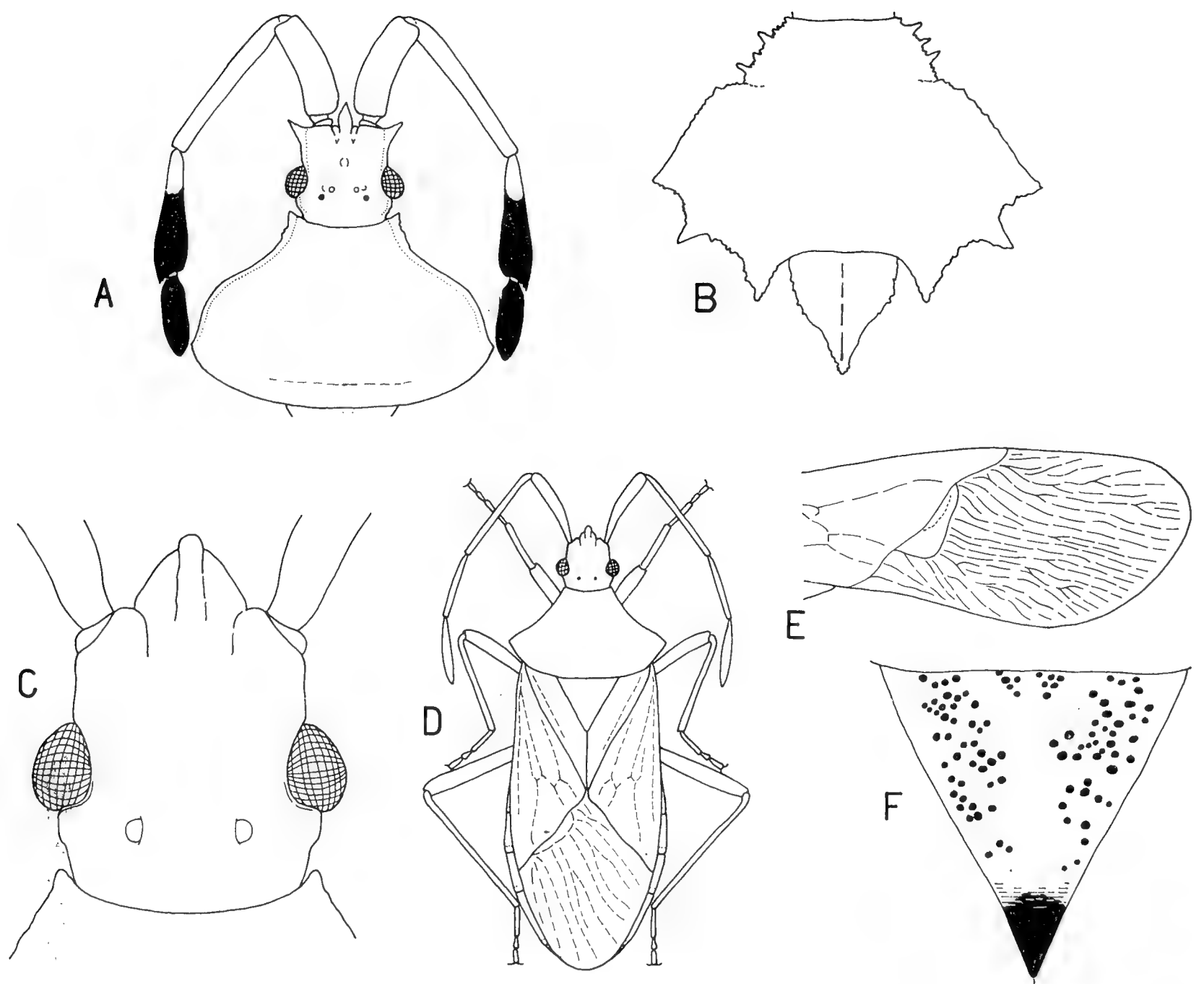


Fig. 57: A, *Enoplus scapha*; B, *Centrocoris spiniger*; C, D, *Gonocerus acuteangulatus*; E, F, *Gonocerus juniperi*.

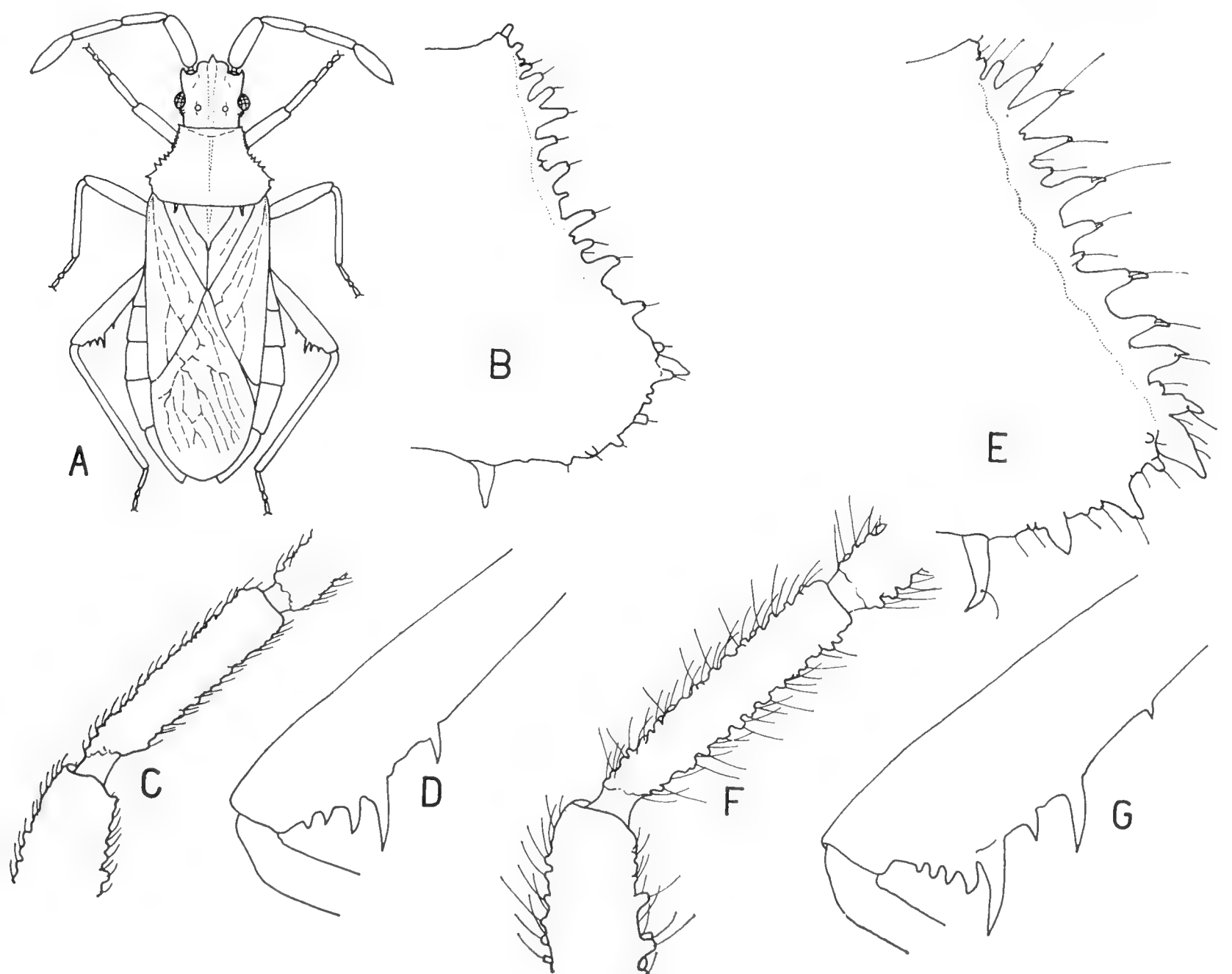


Fig. 58: A, B, C, D, *Coriomeris scabricornis*; E, F, G, *Coriomeris denticulatus*.

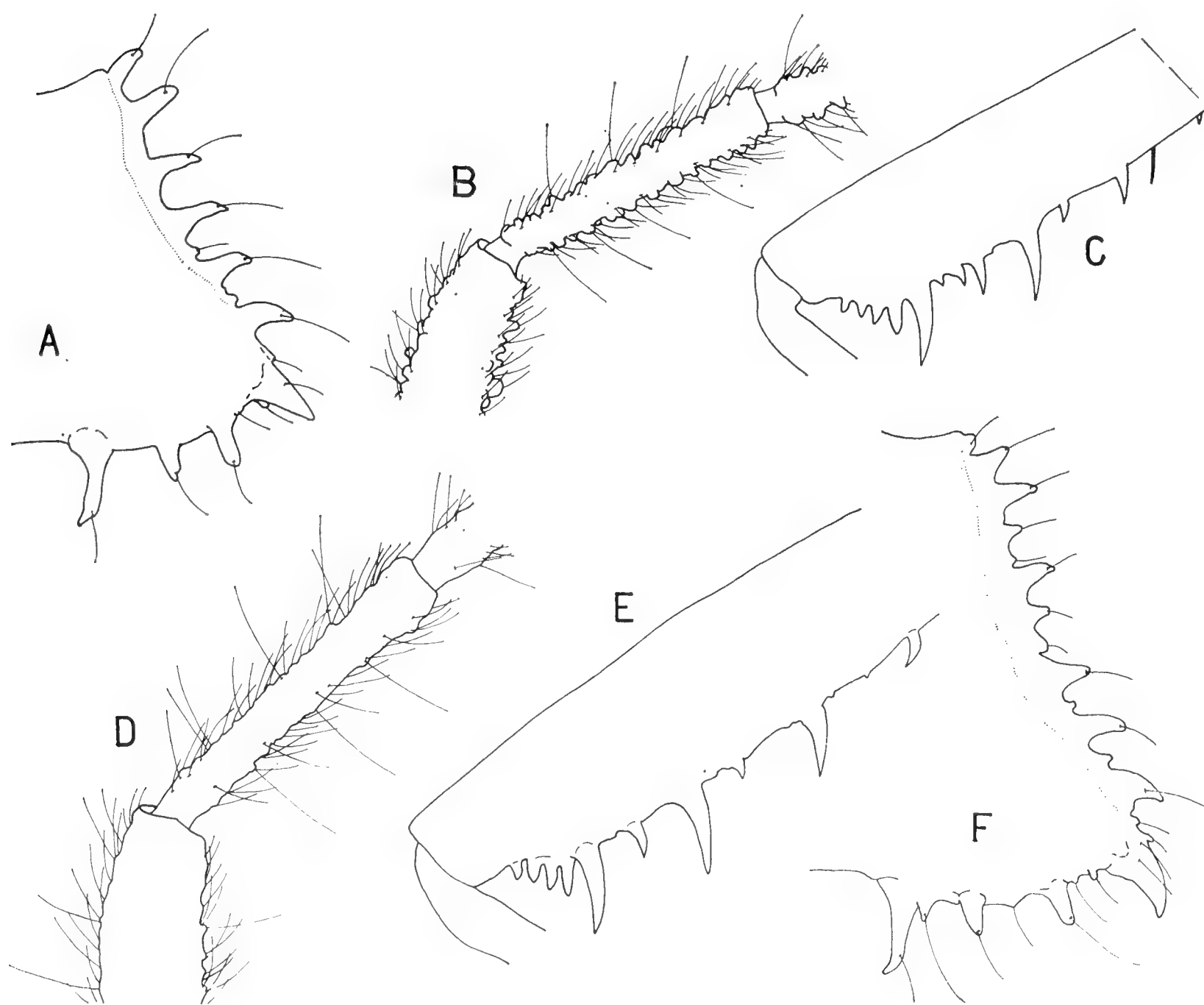


Fig. 59: A, B, C, *Coriomeris spinolai*; D, E, F, *Coriomeris hirticornis*.

Genere *Geocoris* Fall. (6 specie)

Piccoli, ovali, lucenti, nericci con il capo assai breve, largo e gli occhi prominenti lateralmente. In luoghi soleggati e sabbiosi dove cacciano pupe e larve di ditteri, ninfe di eterotteri, uova e piccole larve di coleotteri.

- | | | |
|----|--|---------------------------------|
| 1. | Larghezza del pronoto pari a circa 2 volte la lunghezza. Parte mediana del pronoto nera | 2 |
| — | Larghezza del pronoto uguale o di poco inferiore alla lunghezza. Pronoto nero con una linea mediana longitudinale chiara; emielitre giallicce con il margine interno nero. Lungh. mm 3,0 - 3,4
<i>G. lineola</i> (Ramb.)
Olomediterraneo - macaronesico - iranica eritrea; Italia appenninica e isole. | |
| 2. | Punteggiatura del pronoto fine e densa. Lungh. mm 2,6 - 2,8 | <i>G. pallidipennis</i> (Costa) |
| — | Punteggiatura del pronoto profonda e spaziata. Lungh. mm 3,0 - 3,5 (Fig. 52 B) | <i>G. megacephalus</i> (Rossi) |
| | Olomediterraneo - turanica - macaronesica; tutta Italia e isole. | |

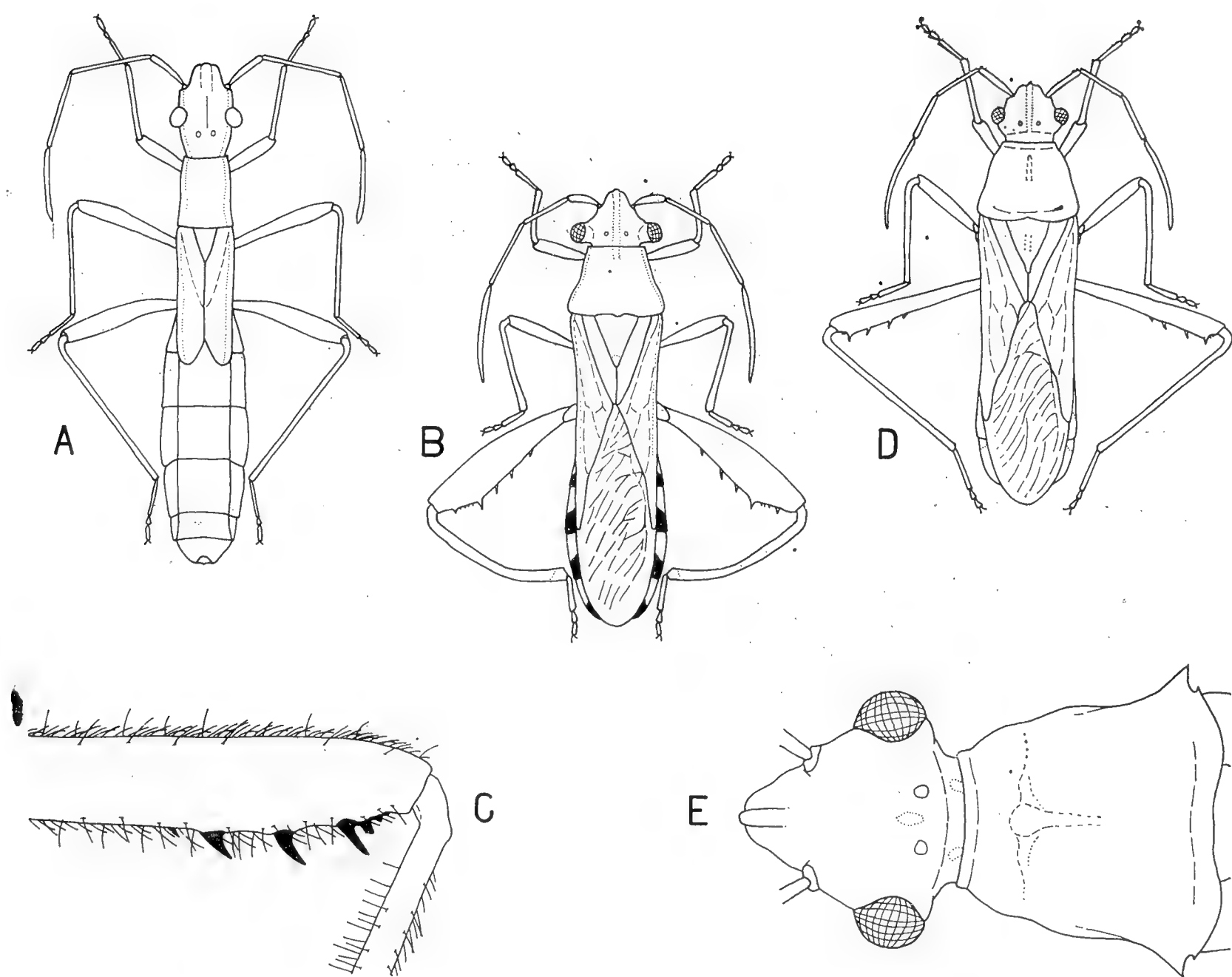


Fig. 60: A, *Micrelytra fossularum*; B, *Camptopus lateralis*; C, D, *Alydus calcaratus*; E, *Meganolotus junceus*.

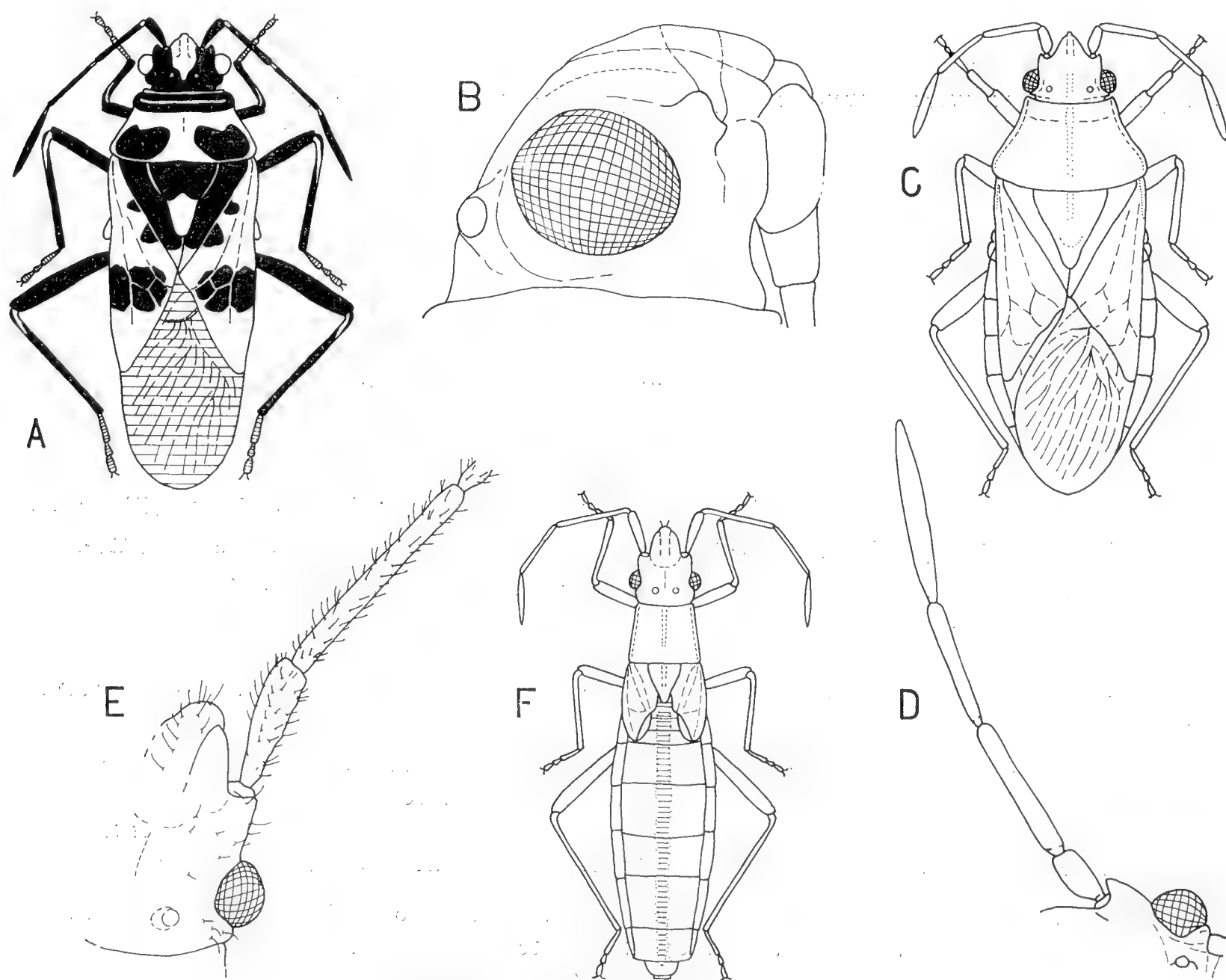


Fig. 61: A, *Coryzus hyosciami*; B, *Brachycarenum tigrinus*; C, D, *Maccevetus lineola*; E, F, *Myrmus miriformis*.

Genere *Heterogaster* Schill. (4 specie)

Capo e regioni inferiori nere, pronoto ed emielitre bianco-giallo con macchie nere. Su piante erbacee.

1. Femori neri, solo l'apice esterno giallo 2
- Femori neri, ma con diverse macchie chiare 3
2. Tibie gialle con una macchia nera ai due estremi. Lungh. mm 6,5 - 7,5 (Figg. 53 E F) *H. cathariae* (Geoffr.)
- Sudeuropeo - sudmediterraneo - turanica; Italia settentrionale.
- Tibie gialle con tre anelli neri: ai due estremi ed in mezzo. Lungh. mm 7,0 - 7,5 *H. affinis* H. S.
- (Fig. 53 D)

Genere *Trapezonotus* Fieber (4 specie)

Capo e regioni inferiori nere, pronoto ed emielitre in parte gialle. Sotto pietre e nel fogliame guasto.

1. Maschio con le sole tibie posteriori completamente nere; femmina con tutte le tibie nere. Lungh. mm 4,5 - 5,0 *T. arenarius* (L.)
- Euroasiatico - olomediterranea; Italia sett. e appenninico - montana, Sicilia.
- Maschio con tutte le tibie almeno in parte gialle; femmina almeno con le tibie posteriori in parte gialle. Lungh. mm 5,0 - 5,5 (Figg. 50 E, 54 C) *T. dispar* (Stal)
- Europea - centromeridionale maghrebino - anatolico - turanica; Italia sett. e appenninico - montana.

Genere *Megalonotus* Fieber (8 specie)

Capo e corpo nero, solo antenne, zampe ed emielitre possono essere in parte chiari. Sotto pietre e nel fogliame.

1. Tutti i femori giallo - arancio 2
- Almeno i femori anteriori in parte neri 3
2. Corpo con peluria breve, adagiata, frammista ad altra più lunga, eretta. Primo articolo delle antenne completamente giallo. Lungh. mm 4,5 - 5,0 *M. hirsutus* Fieb.
- Medioeuropea turano - sibirica; Italia sett. e Basilicata montana.
- Corpo solo con peluria adagiata. Primo articolo delle antenne giallo con la base nera. Lungh. mm 4,5 - 5,0 *M. antennatus* (Schl.)
- Europea centrosettentrionale - sudeuropea orientale - turanica; Italia sett. e appenninico - montana.
3. Pronoto ed emielitre lisce e lucenti. Femori medi e posteriori gialli. Lungh. mm 4 - 5 (Fig. 50 F) *M. praetextatus* (H. S.)
- Medioeuropeo - sudmediterranea irano - turanica; tutta Italia e isole.
- Pronoto ed emielitre opache. Femori medi e posteriori neri. Membrana con una macchia nera solo alla base. Lungh. mm 5,3 - 6,0 (Fig. 54 B) *M. chiragra* (F.)
- Eurosibirica olomediterraneo - turanica canadese; tutta Italia e isole.

Genere *Peritrechus* Fieber (7 specie)

Capo e corpo nero; metà posteriore del pronoto ed emielitre giallo-bianche, queste ultime con punteggiatura e macchie nere. Sotto le pietre e fra le erbe in zone soleggiate.

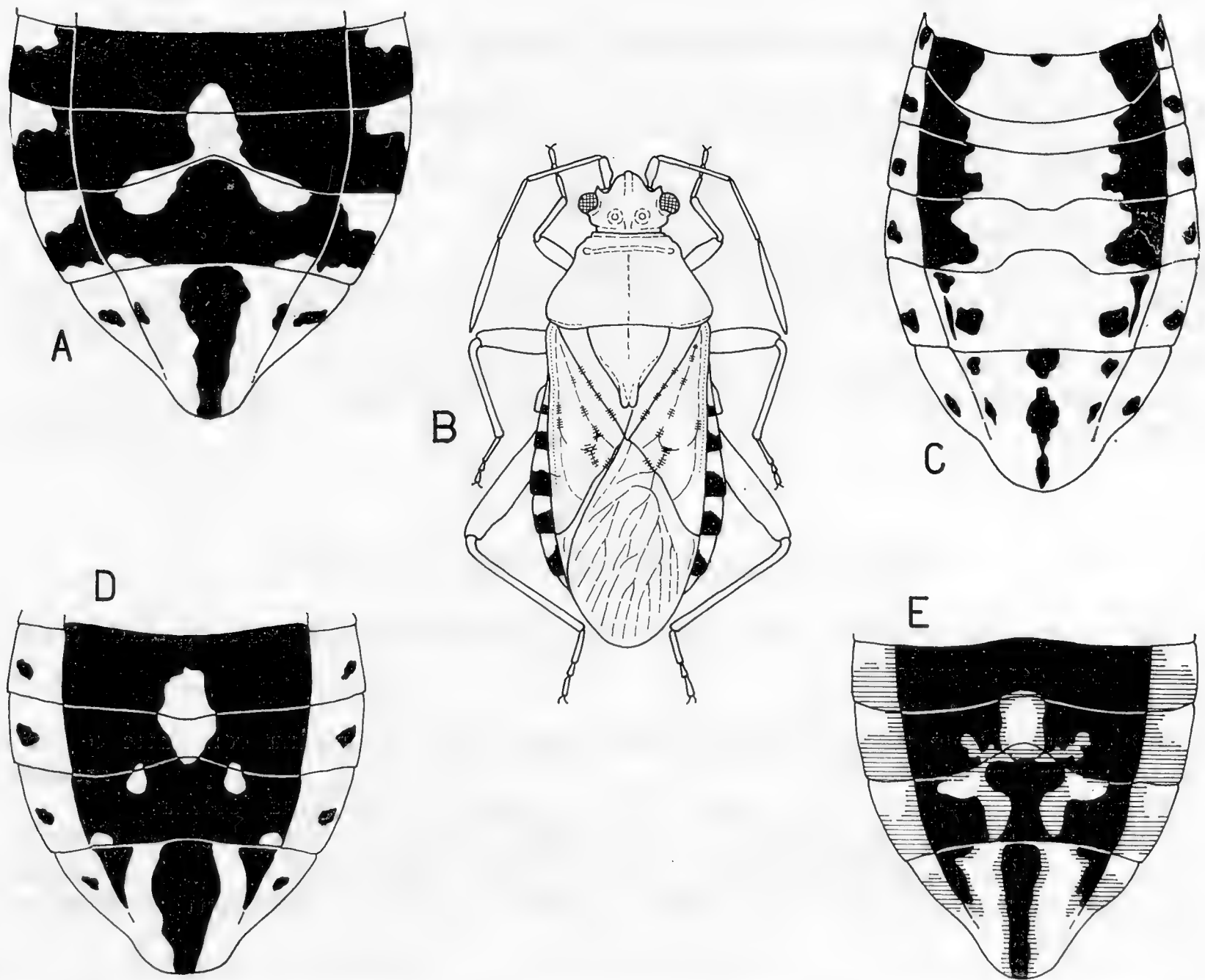


Fig. 62: A, B, *Rhopalus subrufus*; C, *Rhopalus maculatus*; D, *Rhopalus parumpunctatus*; E, *Rhopalus conspersus*.

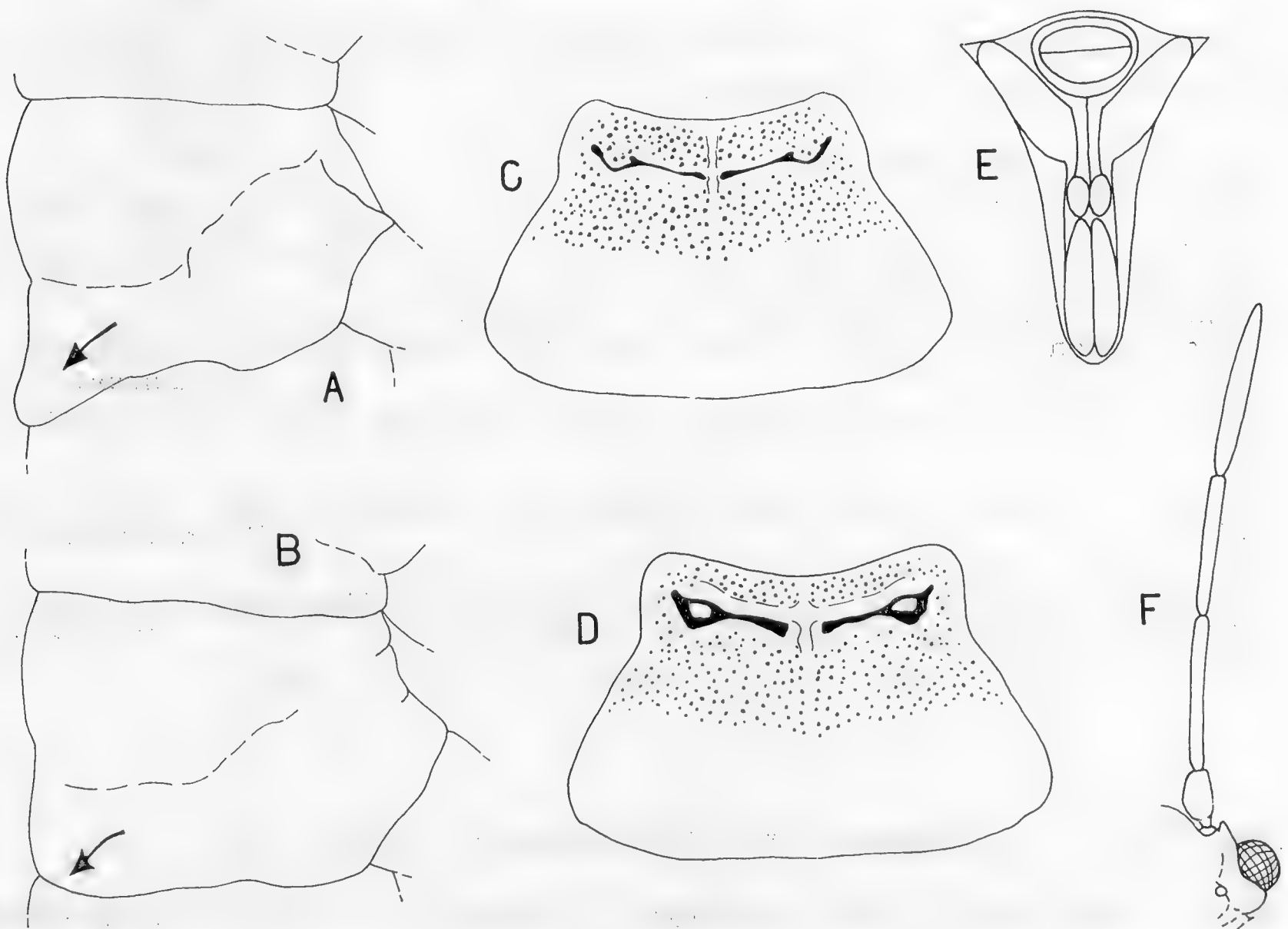


Fig. 63: A, *Rhopalus parumpunctatus*; B, *Stictopleurus abutilon*; C, E, *Stictopleurus punctatovenosus*; D, *Stictopleurus crassicornis*; F, *Stictopleurus pictus*.

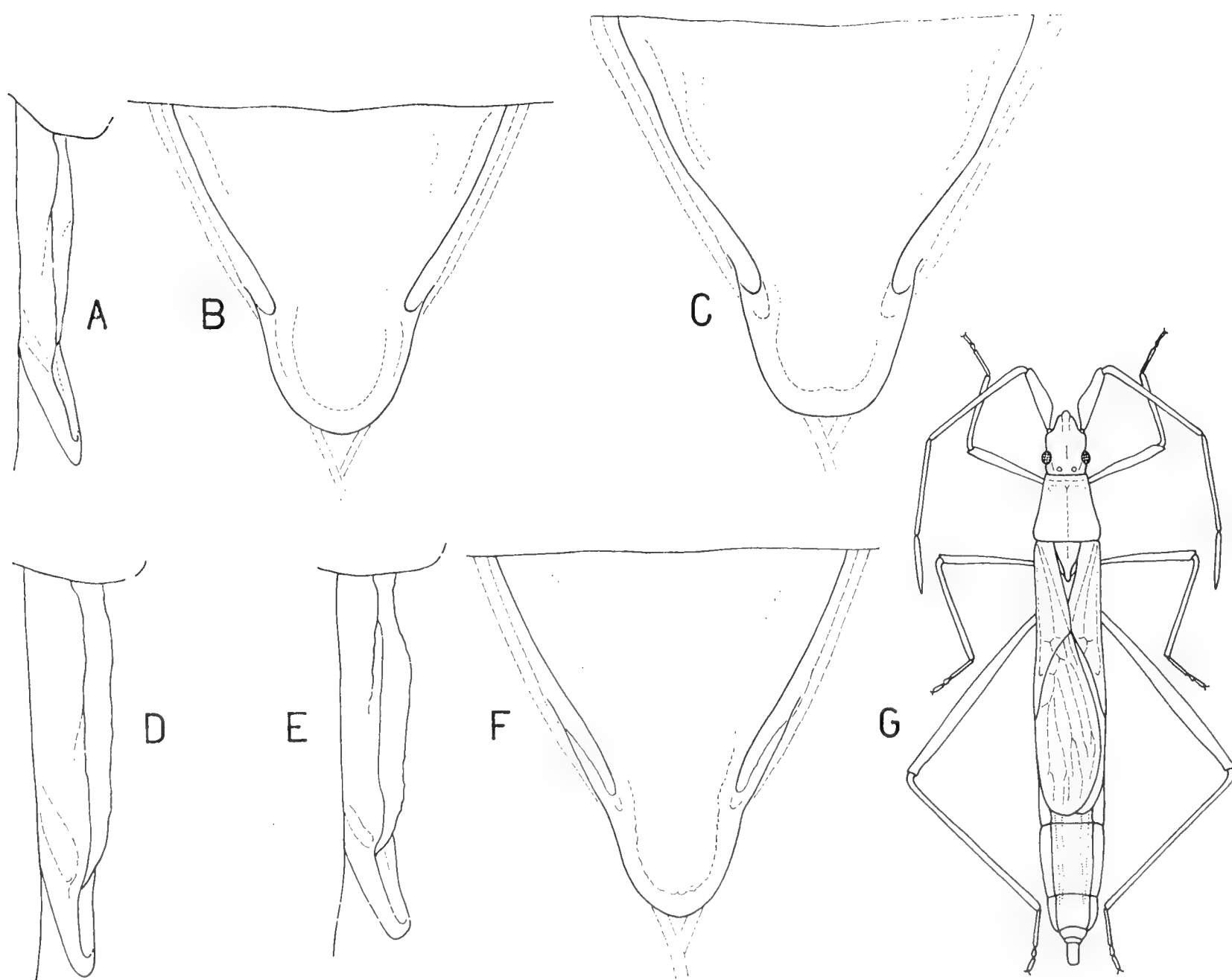


Fig. 64: A, B, *Stictopleurus pictus*; C, D, *Stictopleurus abutilon*; E, F, *Stictopleurus crassicornis*; G, *Chorosoma schillingi*.

1. Margine laterale del pronoto nero dalla metà all'angolo anteriore; antenne nere; femori neri e tibie gialle. Lungh. mm 5,0 - 5,8 (Fig. 51 D E) *P. gracilicornis* Put.
Medioeuropeo - olomediterranea irano - turanica; tutta Italia e isole.
- Margine laterale del pronoto giallo, solo l'angolo anteriore e posteriore neri. Antenne nere con la base del secondo articolo gialla. Lungh. mm 4,5 - 5,0 *P. lundi* (Gmel.)
Europea centromeridionale mediterraneo - occidentale; tutta Italia e isole, nelle regioni meridionali è montana.

Genere *Rhyparochromus* (16 specie)

Corpo nero, almeno parte del pronoto e delle emielitre tende al gialliccio o al rosso. Fra detriti vegetali, in mezzo alle erbe e sotto le pietre.

1. Scutello nero unicolore 2
- Scutello nero con due macchie gialle all'estremità. Margine laterale e posteriore del pronoto ed emielitre giallo - grigie. Corio con una macchia nera romboidale all'estremità. Lungh. mm 7 - 8 *R. lynceus* (F.)
Euroanatolico - iranica; quasi tutta Italia e Sicilia.
2. Membrana bianca con una macchia nericia nel mezzo. Pronoto con il margine laterale, gli angoli posteriori e una larga fascia basale giallo - paglia. Emielitre dello stesso colore con una macchia nera nell'angolo interno posteriore. Lungh. mm 4,5 - 5,6 *R. quadratus* (F.)

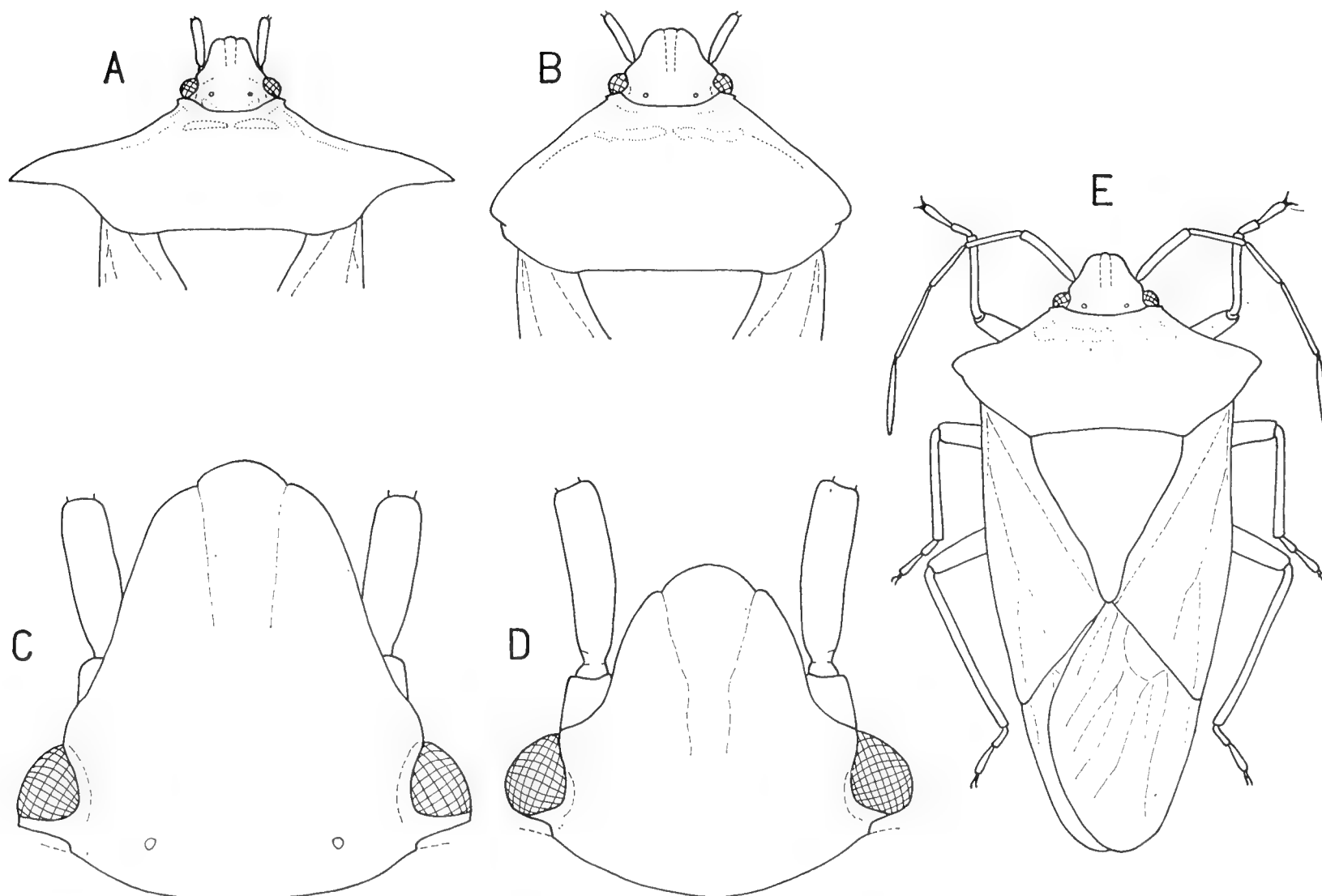


Fig. 65: A, *Elasmucha ferrugata*; B, *Elasmucha grisea*; C, *Cyphostethus tristriatus*; D, *Elasmostethus interstinctus*; E, *Acanthosoma haemorrhoidale*.

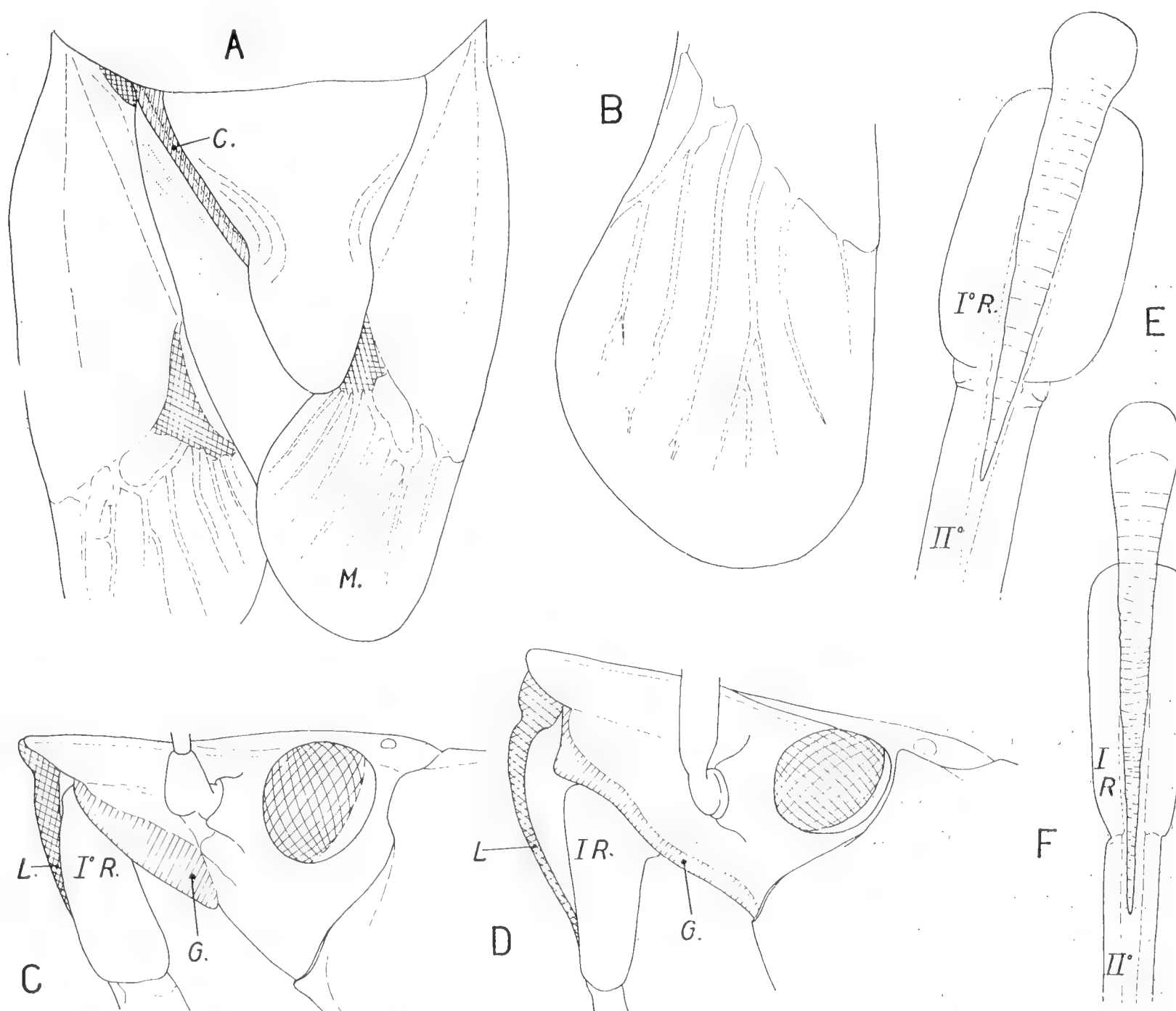


Fig. 66: A, *Carpocoris pudicus*; B, *Graphosoma italicum*; C, *Picromerus bidens*; D, F, *Pentatomia rufipes*.

Medioeuropeo - sudmediterraneo - turanica; tutta Italia e Sicilia. Nell'Italia meridionale e isole convive con due specie molto simili aventi la fascia nera del clavo con una estensione tre volte maggiore: *R. saturnius* (Rossi) lungo mm 7,5 - 8,0, olomediterraneo; *R. minusculus* (Reut.), lungo mm 4,7 - 5,4, con distribuzione mediterranea orientale.

- Membrana delle emielitre nera con il margine chiaro o con una macchia ovale, bianca all'estremità. Angoli posteriori del pronoto neri 3
- 3. Femori posteriori con una o più spine. Tibie posteriori almeno in parte chiare. 4
- Femori posteriori privi di spine. Tibie posteriori nere. 5
- 4. Femori neri, i posteriori con 5 - 6 spine. Regioni inferiori con macchie puntiformi chiare. Corio bianco - giallo con macchia nera. Lungh. mm 7,0 - 7,5 *R. confusus* (Reut.)
Sudeuropeo - mediterraneo - iranica; tutta Italia e isole.
- Femori almeno in parte chiari, i posteriori con una spina grande ed una piccola. Corio molto variabile da arancio a giallo - grigio con una macchia bianca ed una nera. Lungh. mm 6,0 - 9,5 *R. alboacuminatus* (Goez.)
Medioeuropeo - mediterraneo - turanica macaronesica; tutta Italia e Sicilia.
- 5. Metà anteriore del pronoto completamente nera anche ai lati 6
- Metà anteriore del pronoto nera con lo stretto orlo marginale chiaro. Tibie anteriori in parte chiare. Lungh. mm 7,0 - 7,5 *R. pini* (L.)
Euroasiatica; tutta Italia e Sicilia.
- 6. Tutte le tibie sono nere. Corio giallo - grigio o rossiccio compreso il margine laterale esterno. Lungh. mm 7,0 - 7,5 *R. phoeniceus* (Rossi)
Euromediterraneo - turanica; tutta Italia e Sicilia.
- Tibie anteriori e medie almeno in parte gialle. Corio giallo - grigio con lo stretto orlo marginale esterno nero. Lungh. mm 7 - 8 (Fig. 54 A) *R. vulgaris* (Schill.)
Medioeuropeo - mediterraneo - turanica; tutta Italia e isole.

Genere *Beosus* Am. & Serv. (2 specie)

Nero, parte delle antenne, delle zampe e delle emielitre gialle o giallo-rosse. In luoghi soleggiati sotto diverse piante.

- 1. Pronoto circa un terzo più breve della sua larghezza massima (Fig. 54 D). Metà posteriore del pronoto ed emielitre giallo - grigie. Lungh. mm 6,5 - 7,5 *B. maritimus* (Scop.)
Medioeuropeo - sudmediterranea macaronesica - turanica; tutta Italia e isole.
- Pronoto circa un quinto più breve della larghezza massima (Fig. 54 E F). Metà posteriore del pronoto ed emielitre giallo - arancio o rossicce. Lungh. mm 6,8 - 7,5 *B. quadripunctatus* (Müll.)
Sudeuropea - mediterranea orientale irano - sibirica; tutta Italia, raro nelle Alpi.

Famiglia XXIX. **Stenocephalidae** (Stenocefalidi; 1 genere, 5 specie)

Nella Regione Palearctica è rappresentata dal genere *Dicranocephalus* Hahn con circa 30 specie fra loro assai simili. I nostri Stenocefalidi vivono negli ambienti soleggiati e sabbiosi ricchi di euforbie. Hanno il corpo castaneo-cenere, le zampe e le antenne nere con anelli gialli.

- 1. Membrana delle emielitre, fra le venature, liscia; antenne con la peluria semieretta e non più lunga del secondo articolo (Fig. 55 A), questo ha un anello nero solo ai due estremi. Lungh. mm 10 - 11 *D. albipes* (F.)
Medioeuropeo - mediterraneo - iranica; tutta Italia e isole.
- Membrana delle emielitre, fra le venature, con numerosi noduli. Secondo articolo delle antenne con tre anelli neri (Fig. 7 E) 2

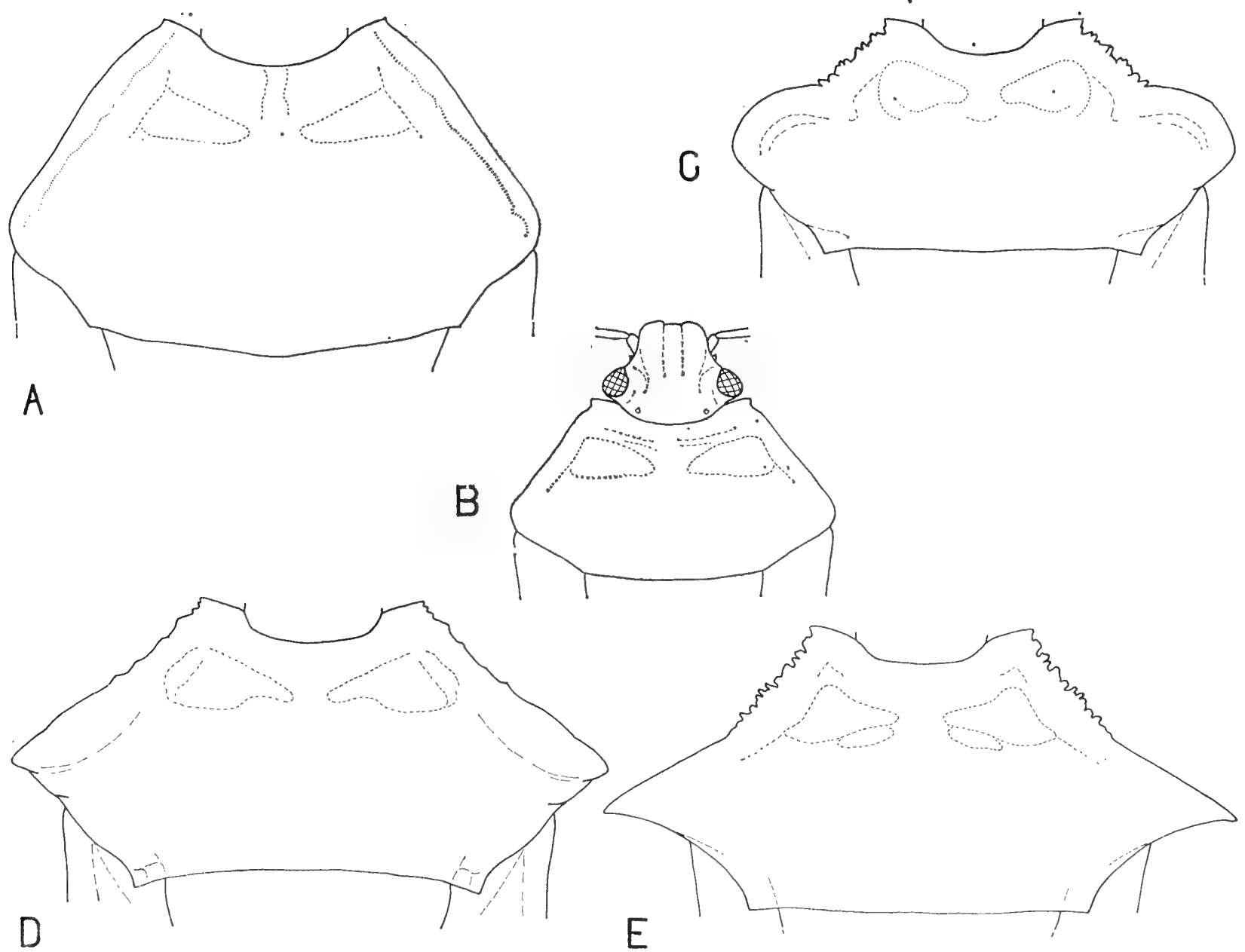


Fig. 67: A, *Jalla dumosa*; B, *Zicrona coerulea*; C, *Troilus luridus*; D, *Arma custos*; E, *Picromerus bidens*.

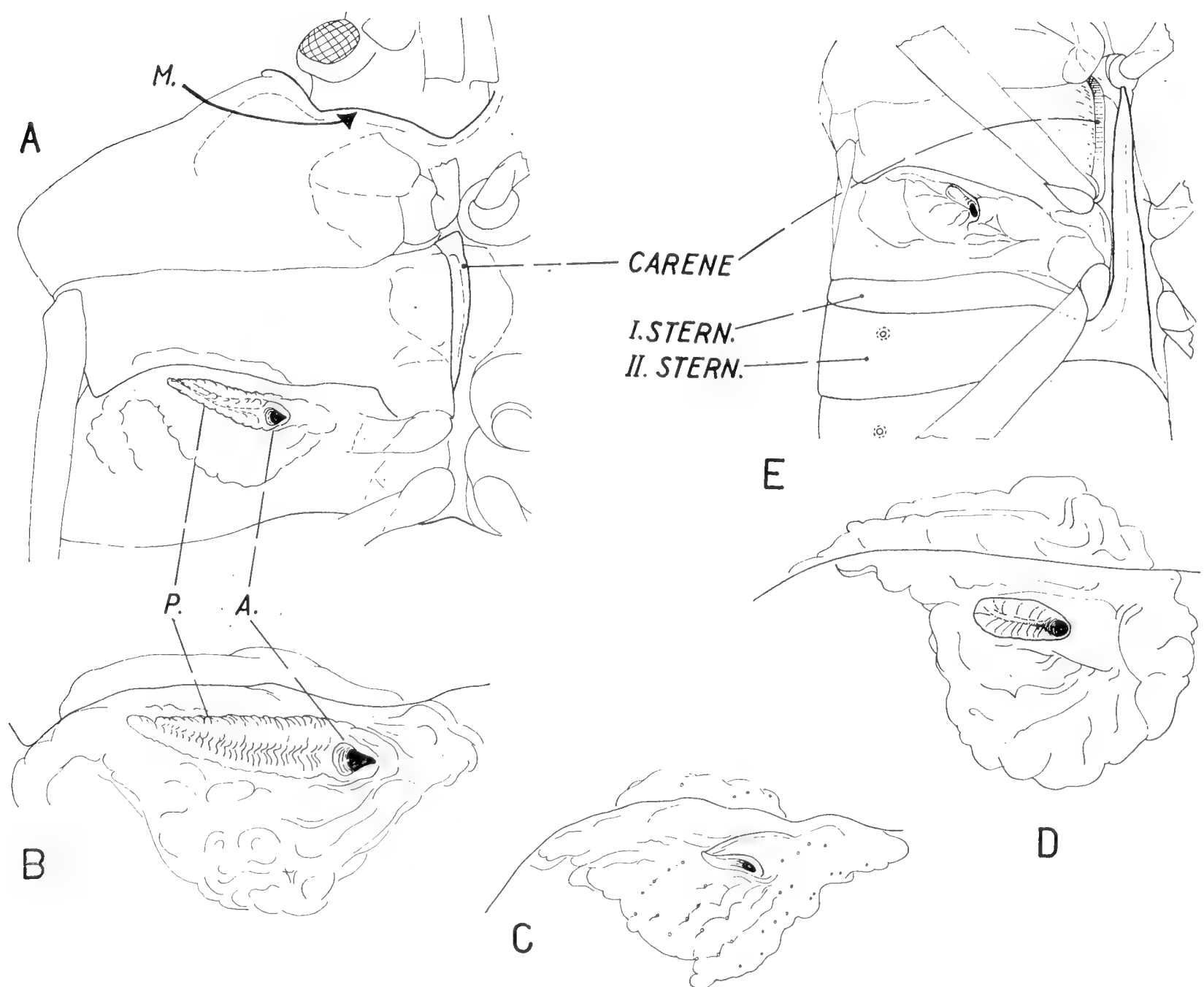


Fig. 68: A, B, *Carpocoris pudicus*; C, *Eysarcoris aeneus*; D, *Antheminia lunulata*; E, *Rhapsigaster*.

2. Antenne e zampe con peluria adagiata e breve. Femori anteriori neri, posteriori neri con i tre quinti basali gialli. Lungh. mm 12 - 14 (Fig. 55 C) *D. agilis* (Scop.)
Euro-siberica macaronese - mediterraneo - iranica; presente in tutta Italia e isole.
- Antenne e zampe con peluria lunga, eretta, specie sul secondo e terzo articolo delle antenne (Fig. 55 B). Anche nei femori anteriori la parte basale è chiara. Lungh. mm. 11 - 12 *D. setulosus* (Ferrari)
Mediterraneo - iranica; presente in quasi tutte le regioni a Sud del Po, in alcuni ambienti xerothermici prealpini e nelle isole.

Famiglia XXX. **Coreidae** (Coreidi; 19 generi, 39 specie)

La maggior parte dei Coreidi si trovano sul terreno, sotto sassi, cespugli e sulle erbe, pochi su piante. La loro colorazione li mimetizza con gli ambienti ter-ricoli. Spesso hanno forme angolose e sono provvisti di speroni o peli rigidi.

1. Parte basale della membrana delle emielitre con una lunga cella triangolare (Fig. 57 E). Capo con solco longitudinale mediano, talvolta appena indicato (Sottofam. *Coreinae* Stal) 2
- Parte basale della membrana con 2 a 4 celle romboidali (Fig. 56 D). Capo sempre privo di solco longitudinale (Sottofam. *Pseudophloeinae* Stal) 6
2. Capo privo di speroni o spine sia alla base delle antenne che sul clipeo (Fig. 57 C). Addome parallelo od ovale allungato *Gonocerus* Latr. (v. dopo)
- Capo con uno o più speroni (Fig. 55 G, 57 A) 3
3. Capo con uno sperone solo all'estremità del clipeo. Connexivi molto allargati così che l'addome ha la forma di rombo o di quadrato (Fig. 55 D) *Syromastus* Berth. (1 specie)
Corpo piatto, giallo castaneo, ultimo articolo delle antenne nero. Lungh. mm 9 - 11 (Fig. 55 D) *S. rhombeus* (L.)
Euro - mediterraneo - turanica; manca nelle regioni più settentrionali e giunge fino alle Canarie; tutta Italia e isole.
- Capo con speroni alla base delle antenne 4
4. Lato interno del tubercolo antennifero con 2 speroni fra loro convergenti (Fig. 55 G) *Coreus* F. (1 specie)
Tutto il corpo è d'un castaneo oscuro uniforme, solo il secondo e terzo articolo delle antenne ed i connexivi sono spesso più chiari. Lungh. mm 10 - 16 *C. marginatus* (L.)
Euroasiatico - nordmediterranea; comune in tutta Italia e isole su artemisie, mente e non di rado su *Beta vulgaris*.
- Tubercolo antennifero con speroni sul lato interno ed esterno 5
5. Margine posteriore del pronoto diritto (Fig. 57 A), scutello piano. Corpo di almeno 11 mm *Enoplops* Am. & Serv. (2 specie)
Terzo articolo delle antenne appiattito sul lato ventrale per tutta la sua lunghezza. Castaneo - nero, margine del pronoto ed una macchia sui connexivi bianco - gialla. Lungh. mm 11 - 12,5 *E. scapha* (F.)
Maghrebino - euro-siberica turanica; Italia settentrionale e peninsulare montana.
- Margine posteriore del pronoto, ai lati dello scutello, prolungato in un'apofisi appuntita. Scutello con carena mediana (Fig. 57 B) *Centrocoris* (Kol.) (2 specie)
Capo con due serie di spine, margine laterale anteriore del pronoto e posteriore ai lati dello scutello pure con spine. Castaneo chiaro con macchie irregolari giallo - paglia. Lungh. mm 8,5 - 10,5 *C. spiniger* (F.)
Sudeuropea olomediterraneo - turanica; tutta Italia fino alle Alpi, sotto cespugli e nel fogliame guasto.
6. Femori posteriori almeno con uno sperone nella metà esterna (Fig. 56 F) 7
- Femori posteriori privi di spine o speroni, tibie anteriori con un solco nella parte esterna *Spathocera* Stein (3 specie)

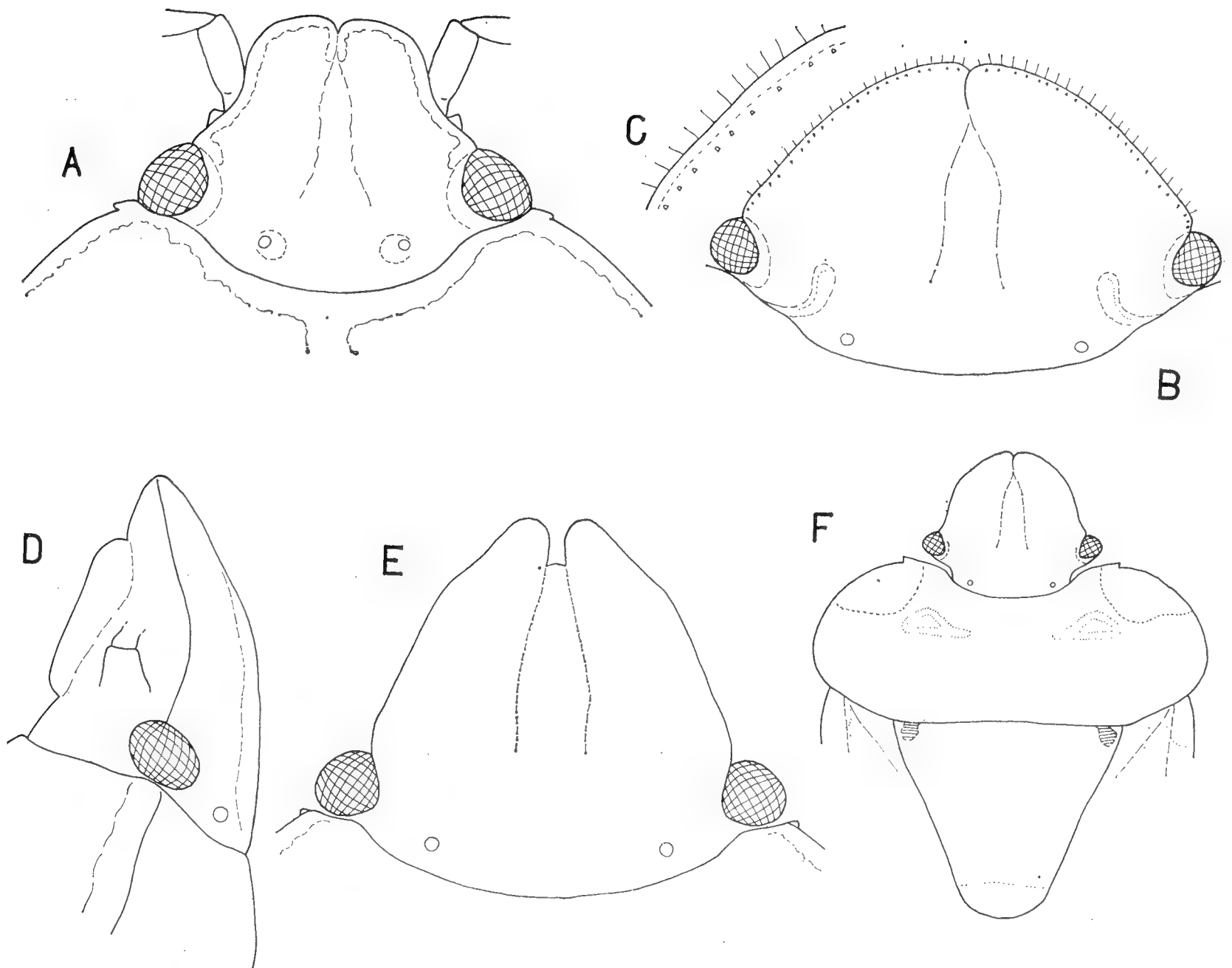


Fig. 69: A, *Eurydema ventrale*; B, C, *Menaccarus arenicola*; D, E, *Rubiconia intermedia*; F, *Dyroderes umbraculatus*

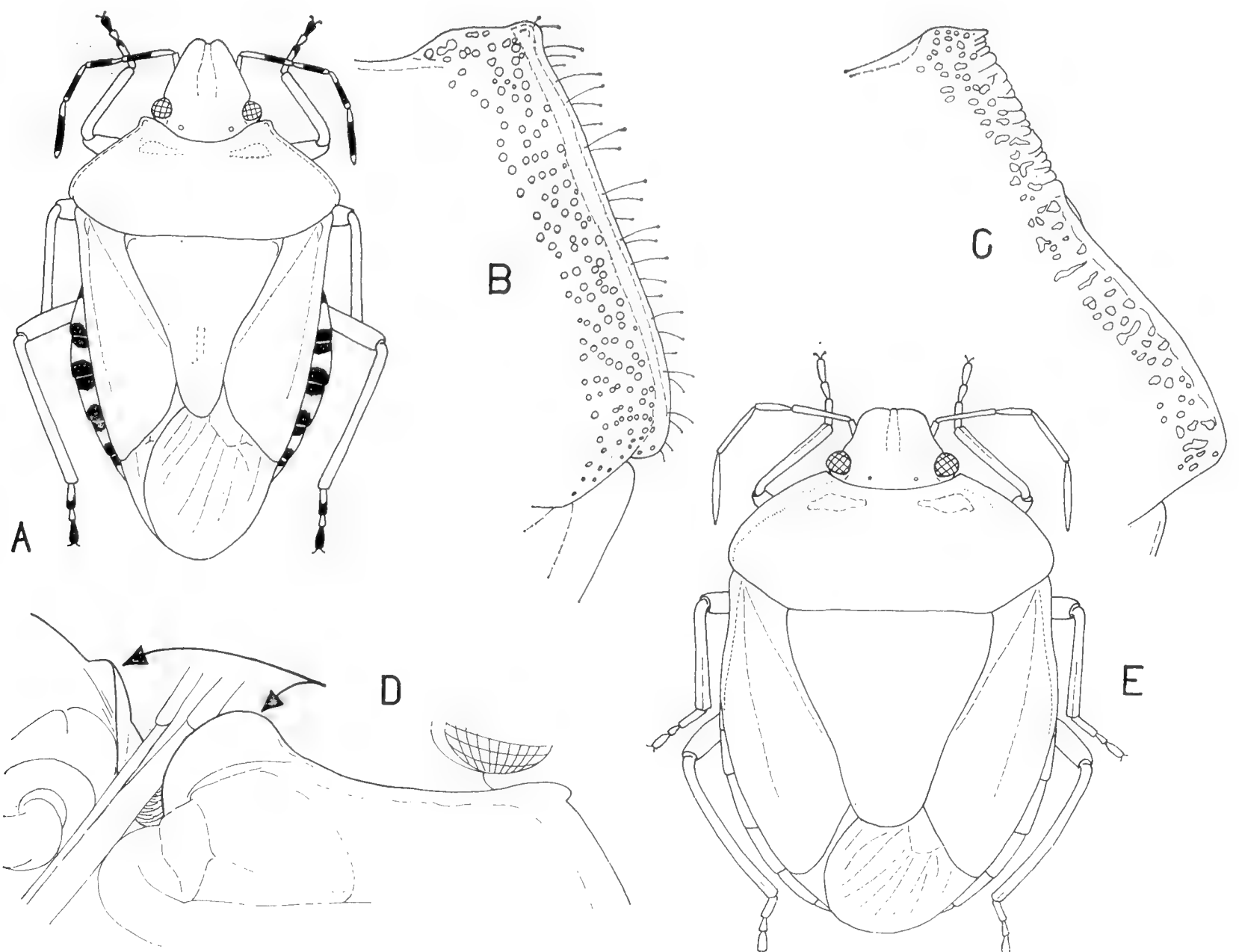


Fig. 70: A, B, *Dolycoris baccarum*; C, *Codophila varia*; D, *Staria lunata*; E, *Pitedia juniperina*.

- Corpo giallo - castaneo chiaro, ultimo articolo delle antenne globoso e nero, penultimo come in Fig. 56 A. Carene laterali del pronoto bene sviluppate solo nel mezzo. Lungh. mm 5,5 - 6,5 (Fig. 56 B) *S. dalmani* Schil.
Euroanatolica; Italia settentrionale e nei monti di alcune regioni dell'Appennino.
7. Femori posteriori con un solo sperone robusto 8
— Femori posteriori almeno con due speroni 9
8. Buccule rettangolari, che dalla metà del capo giungono fino al clipeo. Ultimo articolo delle antenne ovale, distintamente più breve e più grosso del terzo (Fig. 55 E) *Bathysolen* Fieb. (1 specie)
Castaneo - cenere o giallo - cenere con il margine del pronoto ed una macchia sui connexivi più chiara. Lungh. mm 5 - 6 *B. nubilus* (Fall.)
Medioeuropea - mediterraneo orientale - turanica; in quasi tutte le regioni italiane tra le Alpi e il Lazio.
- Buccule ovali, più brevi della metà del capo. Ultimo articolo delle antenne lungo pressoché quanto il terzo e meno ingrossato (Fig. 55 E) *Ulmicola* Kirk. (1 specie)
Castaneo con il margine laterale del pronoto orlato finemente di giallo; tibie, secondo e terzo articolo delle antenne castaneo chiaro o rossiccio. Lungh. mm 8 - 9 *U. spinipes* (Fall.)
Medioeuropea sudeuropeo - orientale - sibirica; Italia settentrionale e appenninica fino all'Abruzzo.
9. Margine laterale del pronoto con piccole spine assai ravvicinate solo anteriormente; margine posteriore del pronoto pressoché diritto e privo di spine (Fig. 56 C E) *Ceraleptus* Costa (v. dopo)
- Tutto il margine laterale del pronoto provvisto di spine variamente distanziate come in Figg. 58 A B E 10
10. Margine posteriore del pronoto, ai lati dello scutello, con una piccola spina rivolta indietro. Capo distintamente più lungo che largo *Coriomeris* Westw. (v. dopo)
- Margine posteriore del pronoto, ai lati dello scutello, con un profondo incavo. Capo visto da sopra pressoché quadrato *Loxocnemis* Fieb. (1 specie)
Castaneo - nero con peli chiari semieretti; connexivi gialli con il margine anteriore e posteriore nero. Capo con una macchia mediana gialla. Lungh. mm 9 - 10 *L. dentator* (F.)
Sudeuropeo - sudmediterranea anatolica; segnalato in quasi tutte le regioni italiane ed in Sardegna.

Genere *Gonocerus* Latr. (4 specie)

1. Scutello con punteggiatura irregolare, grossa, profonda, assai rada o assente sulla linea mediana (Fig. 57 F). Corpo giallo castaneo spesso verdiccio. Lungh. mm 11 - 13 *G. juniperi* H. S.
Medioeuropea sudeuropeo - orientale - anatolica; dall'Italia alpina al Lazio, su ginepro.
- Scutello con punteggiatura regolare, densa anche sulla linea mediana. Corpo arancio-castaneo. Lungh. mm 12 - 14 (Fig. 57 C D) *G. acuteangulatus* (Goeze)
Euroturanica; tutta Italia e isole su noccioli e altri arbusti.

Genere *Ceraleptus* Costa (3 specie)

1. Tubercolo antennifero esterno ripiegato a semicerchio sotto la base dell'antenna. Margine laterale del pronoto distintamente incavato (Fig. 56 E). Corpo giallo - grigio o castaneo - nero con i connexivi a macchie alterne bianche e nere. Lungh. mm 10 - 11 *C. gracilicornis* (H. S.)
Europea centromeridionale - mediterranea occidentale - iranica; presente in quasi tutte le regioni italiane e grandi isole.
- Tubercolo antennifero brevissimo o assente; margine laterale del pronoto solo debolmente sinuoso (Fig. 56 C F). Colorazione di poco più chiara che nella specie precedente. Lungh. mm 10 - 11 *C. obtusus* (Brull.)
Macaronesica mediterraneo - turanica; presente in diverse regioni italiane, in Sicilia e Sardegna.

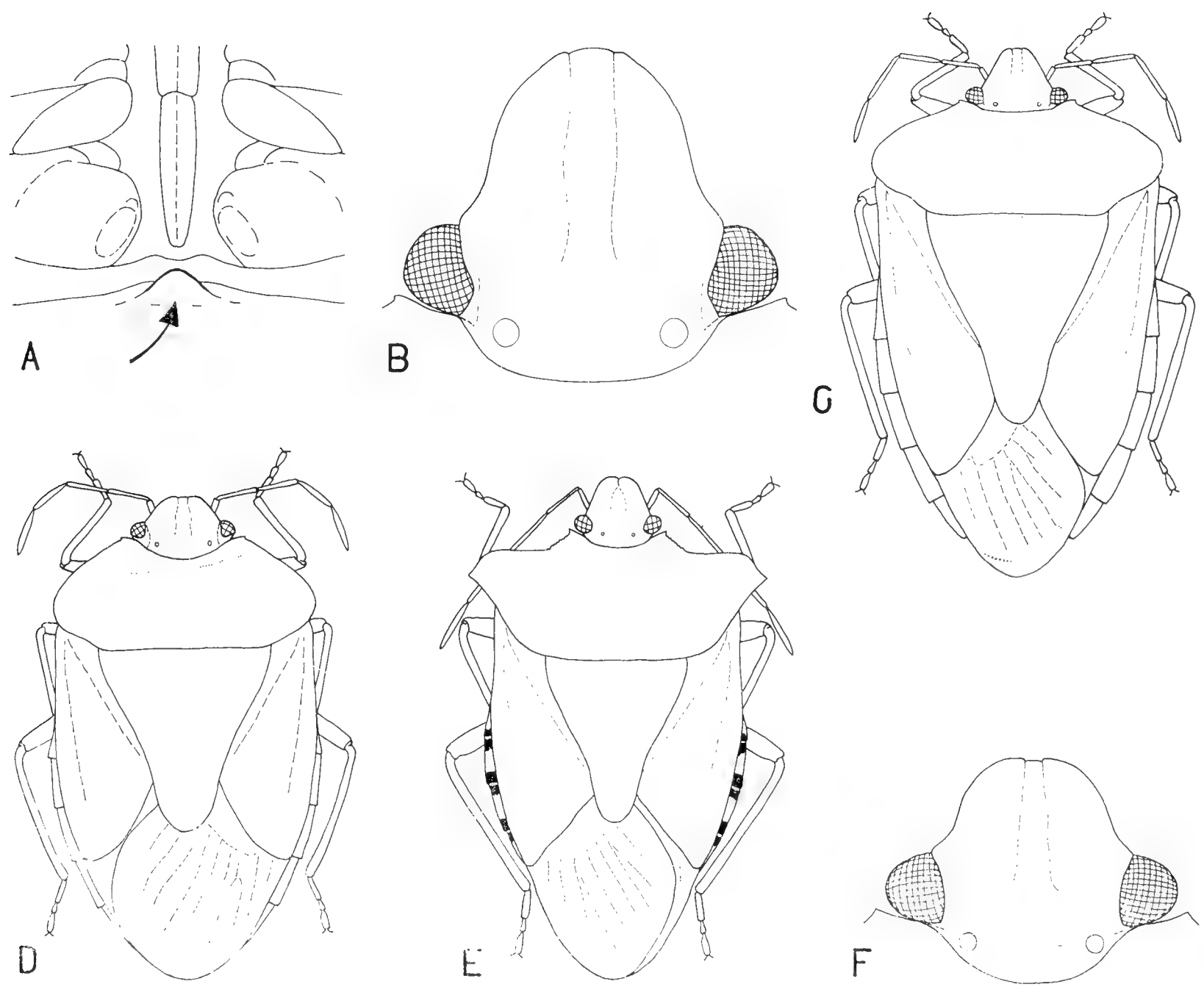


Fig. 71: A, B, C, *Nezara viridula*; D, *Piezodorus lituratus*; E, *Pentatoma rufipes*; F, *Acrosternum millieri*.

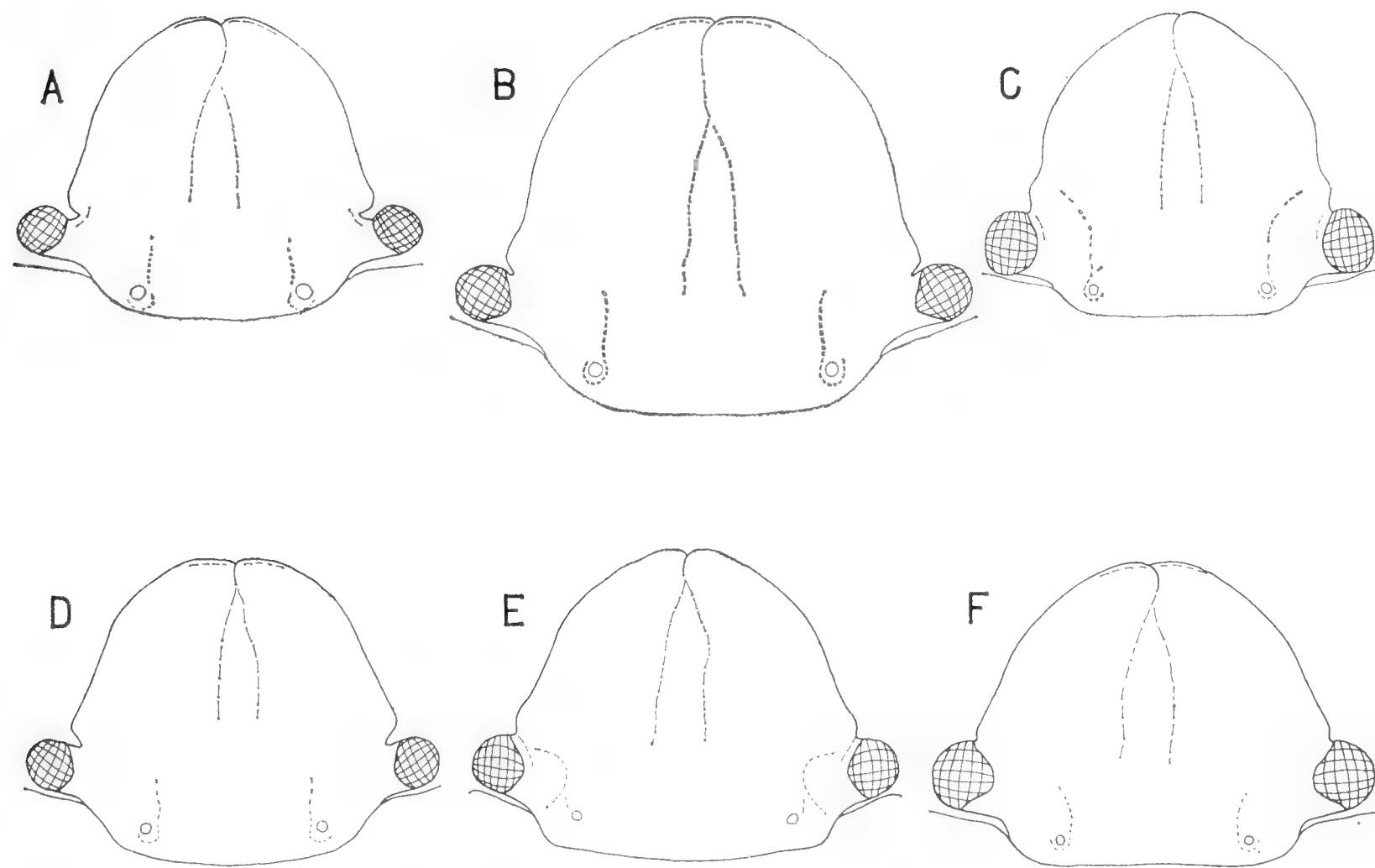


Fig. 72: A, *Sciocoris macrocephalus*; B, *Sciocoris homalonotus*; C, *Sciocoris sideritis*; D, *Sciocoris microphthalmus*; E, *Sciocoris sulcatus*; F, *Sciocoris cursitans*.

Genere *Coriomeris* Westw. (6 specie)

1. Antenne con peli brevi adagiati, frammisti ad altri più radi, lunghi e semieretti (Fig. 58 F) 2
 — Tutti i peli delle antenne sono brevi e adagiati (Fig. 58 C). Femori posteriori come in Fig. 58 D. Corpo da giallo-grigio a castaneo-nero; spine laterali del pronoto (Fig. 58 B) bianche. Lungh. mm 8-9 (Fig. 58 A) *C. scabricornis* (Panz.)
 Eurosibirico - anatolico - turanica; Italia settentrionale e appenninica montana.
2. Femori posteriori con 3 speroni grandi ed altri minori; margine laterale del pronoto come in Figg. 59 A F 3
 — Femori posteriori con 2 speroni grandi (Fig. 58 G), lati del pronoto come in Fig. 58 E. Peli semieretti del secondo articolo delle antenne lunghi quanto il diametro dell'articolo (Fig. 58 F). Lungh. mm 8-9 *C. denticulatus* (Scop.)
 Eurosibirica mediterraneo - turanica; comune in tutta Italia.
3. Buccule protese avanti in una punta acuta. Peli delle antenne e speroni dei femori come in Figg. 59 A B C. Corpo castaneo - arancio. Lungh. mm 9 *C. spinolai* (Costa)
 Nordmediterraneo - maghrebina; Italia appenninica e padana.
 — Buccule brevi ed ovali. Peli eretti molto lunghi, sulle antenne circa due volte il diametro del secondo articolo (Figg. 59 D E F). Colore del corpo un poco più oscuro che nella specie precedente. Lungh. mm 9-10 *C. hirticornis* (F.)
 Mediterraneo - turanica; tutta Italia e isole.

Famiglia XXXI. **Alydidae** (Alididi; 5 generi, 6 specie)

Si trovano su erbe e cespugli in luoghi molto soleggiati e secchi. Hanno una livrea modesta nella quale domina il castano-nero.

1. Femori posteriori inermi, tibie diritte *Microlytra* Lap. (1 specie)
 Corpo stretto, parallelo (Fig. 60 A), castaneo - nero lucente con una stretta linea bianca ai lati del capo, del pronoto, delle emielitre e spesso dei connexivi. Comune nella forma brachittera. Lungh. mm 8-11 *M. fossularum* Rossi
 Mediterranea; Italia peninsulare, Sardegna e Sicilia.
- Femori posteriori con speroni o spine, ali sempre sviluppate 2
2. Tibie posteriori più brevi dei grossi femori e curvate verso l'interno *Camptopus* Am. & Serv. (1 specie)
 Corpo castaneo chiaro o rossiccio, forma come in Fig. 60 B. Lungh. mm 12-14 *C. lateralis* Germ.
 Macaronesica sudeuropeo - olomediterranea turanico - indiana; tutta Italia e isole.
- Tibie diritte 3
3. Pronoto con gli angoli laterali arrotondati *Alydus* F. (2 specie)
 Corpo, compresi i femori, nero o castaneo - nero opaco, peli pure neri (Fig. 60 C D). Lungh. mm 10-12 *A. calcaratus* (L.)
 Euroasiatico - mediterranea, neartica; tutta Italia e isole.
- Pronoto con gli angoli laterali provvisti di una robusta spina come in Fig. 60 E *Meganolotus* Fieb. (1 specie)
 Corpo nero opaco, tibie e corio castanei. Lungh. mm 13-14 *M. junceus* (Scop.)
 Indoeuropeo - sibirica; Italia settentrionale.

Famiglia XXXII. **Rhopalidae** (Ropalidi; 9 generi, 19 specie)

Vivono su erbe e cespugli in zone soleggiate e secche, poche specie si trovano anche in ambienti molto umidi su erbacee ricche di semi.

1. Corpo stretto, allungato, parallelo, lungo più di 4 volte la sua larghezza. Ultimo articolo delle antenne più breve del terzo o uguale (Figg. 61 F, 64 G) 7
- Corpo più robusto, lungo circa 3 volte la sua larghezza (Figg. 61 A C). Ultimo articolo delle antenne più lungo del terzo, di rado uguale 2

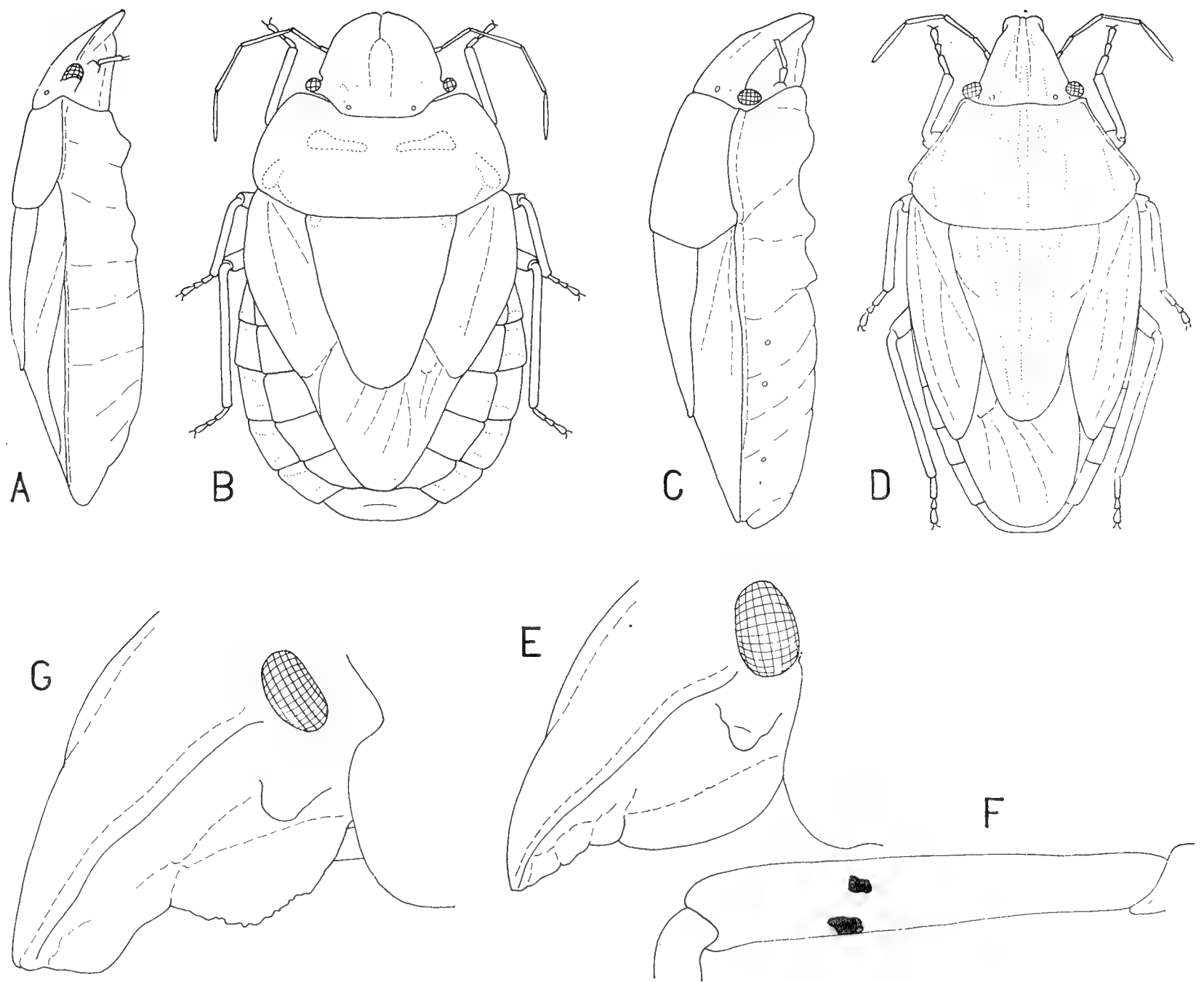


Fig. 73: A, B, *Sciocoris homalonotus*; C, D, E, F, *Aelia acuminata*; G, *Aelia klugi*.

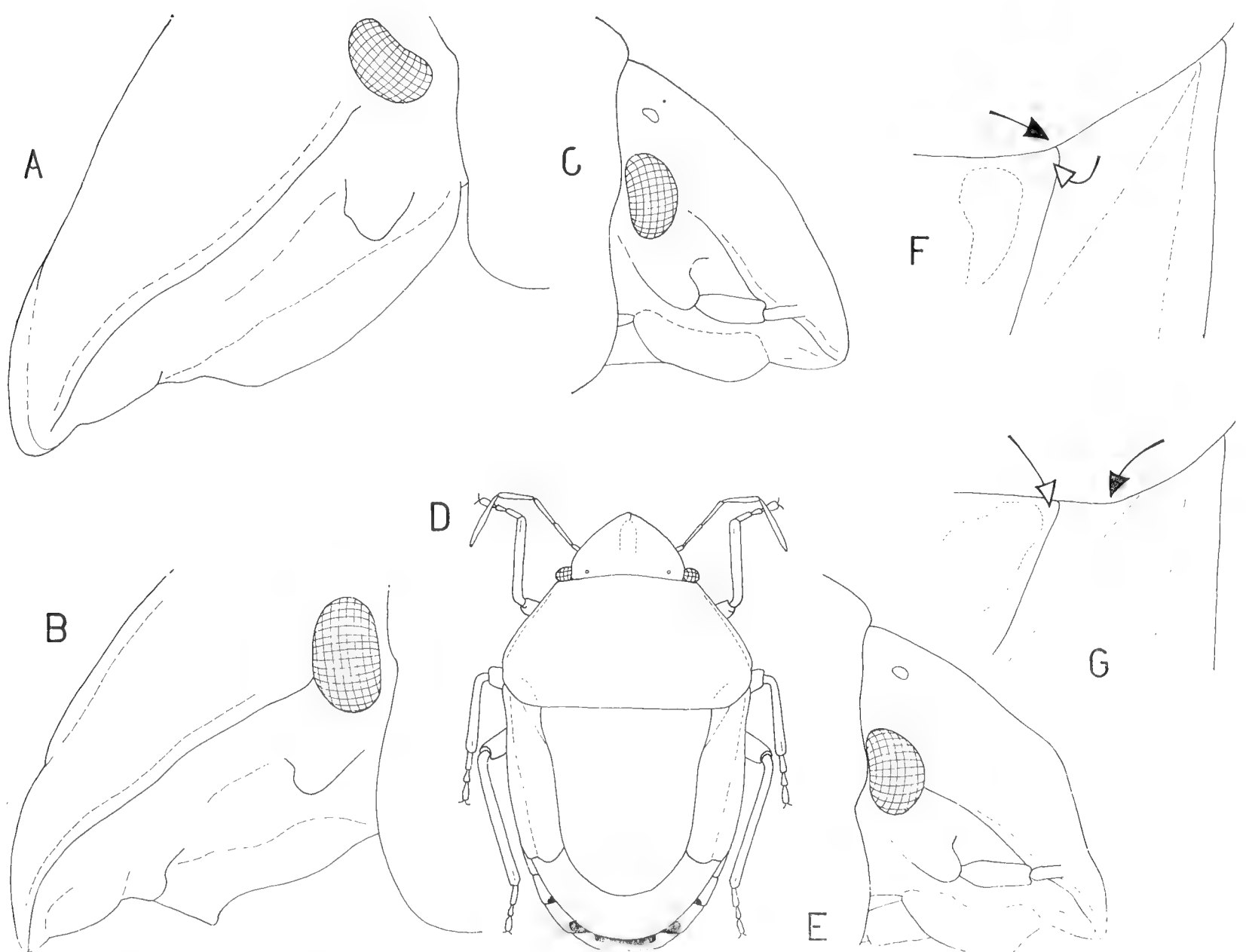


Fig. 74: A, *Aelia germari*; B, *Aelia rostrata*; C, *Neottiglossa bifida*; D, *Neottiglossa leporina*; E, *Neottiglossa pusilla*; F, *Eysarcoris*; G, *Stagonomus amoenus*.

2. Membrana delle emielitre nera, corio rosso a macchie nere *Corizus* Fall. (2 specie)
Corpo rosso con macchie nere nettamente delimitate. Zampe e antenne nere. Lungh.
mm 8 - 10 (Fig. 61 A) *C. hyoscyami* (L.)
Euroasiatico - tirrenico - mediterraneo orientale; tutta Italia e isole dal piano fino a
1500 m.
- Parte del corio e membrana delle emielitre trasparenti 3
3. Metapleure con l'angolo posteriore arrotondato come in Fig. 63 B (osservare l'esem-
plare di fianco) e con punteggiatura densa e uniforme su tutta la superficie 6
- Metapleure allungate posteriormente a becco (Fig. 63 A) con punteggiatura profonda
e serrata solo nella parte anteriore, l'angolo posteriore può essere completamente liscio 4
4. Incavo anteriore del pronoto preceduto da una costa liscia (tra il margine anteriore
e la costa non v'è uno spazio punteggiato) *Liorhyssus* Stal (1 specie)
Giallo - rossiccio a giallo - castaneo, lucente con punteggiatura nera; tergiti gialli a
disegni neri. Lungh. mm 6 - 8 *L. hyalinus* (F.)
Cosmopolita, manca nelle regioni fredde settentrionali; tutta Italia e isole.
- Margine anteriore del pronoto, oltre l'incavo trasverso, punteggiato 5
5. Capo, visto di lato, lungo quanto alto e con il clipeo molto curvato ad arco (Fig.
61 B). Rostro proteso fino al prosterno *Brachycarenum* Fieb. (1 specie)
Giallo chiaro o giallo - rossiccio, lucente; capo e pronoto con macchie irregolari e
variabili formate dalla punteggiatura nera. Lungh. mm 6 - 7 *B. tigrinus* (Schill.)
Eurocentroasiatica mediterraneo - macaronesica; tutta Italia e isole.
- Capo distintamente più lungo che alto; clipeo meno curvato. Rostro allungato fino
al mesosterno *Rhopalus* Schill. (v. dopo)
6. Antenne con il secondo e terzo articolo nettamente più sottili del primo (Fig. 63 F).
Occhi molto sporgenti e non a contatto con il pronoto *Stictopleurus* Stal (v. dopo)
- Secondo e terzo articolo delle antenne di poco più sottili degli altri (Fig. 61 D E).
Occhi poco sporgenti e quasi a contatto con il margine anteriore del pronoto
Maccevethus Dallas (1 specie)
Ovale allungato, giallo con emielitre ed antenne spesso rossicce. Peli brevi e coricati.
Lungh. mm 8 - 10 (Fig. 61 C) *M. lineola* (F.)
Sudeuropeo - sudmediterraneo - turanica; tutta Italia a sud delle Prealpi e isole.
7. Antenne con l'ultimo articolo lungo quanto il terzo e con peluria breve, sericea e
coricata. Emielitre regolarmente sviluppate *Agraphopus* Stal (1 specie)
Corpo giallo - verde chiaro. Lungh. mm 4,5 - 5,5 *A. lethierryi* Stal
Macaronesico - mediterraneo - anatolica; nella maggior parte delle regioni italiane a
sud delle Prealpi.
- Antenne con l'ultimo articolo nettamente più breve del terzo (Figg. 61 F, 64 G).
Emielitre spesso brachittere 8
8. Peli delle antenne castanei, rigidi, semieretti, di poco più brevi del diametro del
secondo articolo (Fig. 61 E). Corpo con peli simili a quelli delle antenne
Myrmus Hahn (1 specie)
Corpo verde o giallo - verde con le regioni mediane superiori percorse da una banda
più o meno castanea. Lungh. mm 7 - 9 (Fig. 61 F) *M. miriformis* (Fall.)
Europea centrosettentrionale - siberica; in tutta l'Italia settentrionale e parte della pe-
ninsulare montana.
- Peli delle antenne e del corpo brevissimi, coricati e sottili. Dimensioni maggiori
Chorosoma Curtis
Corpo molto stretto, giallo paglierino, con una banda oscura corrente sui margini
dei tergiti. Lungh. mm 13 - 17 (Fig. 64 G) *C. schillingi* Schill.
Euromediterraneo - turanica; tutta Italia e isole.

Genere *Rhopalus* Schill. (6 specie)

Specie con colori assai simili, variabili tra il giallo paglierino ed il castaneo-rossiccio, dorso dell'addome nero con macchie gialle, peluria semieretta, sericea e chiara.

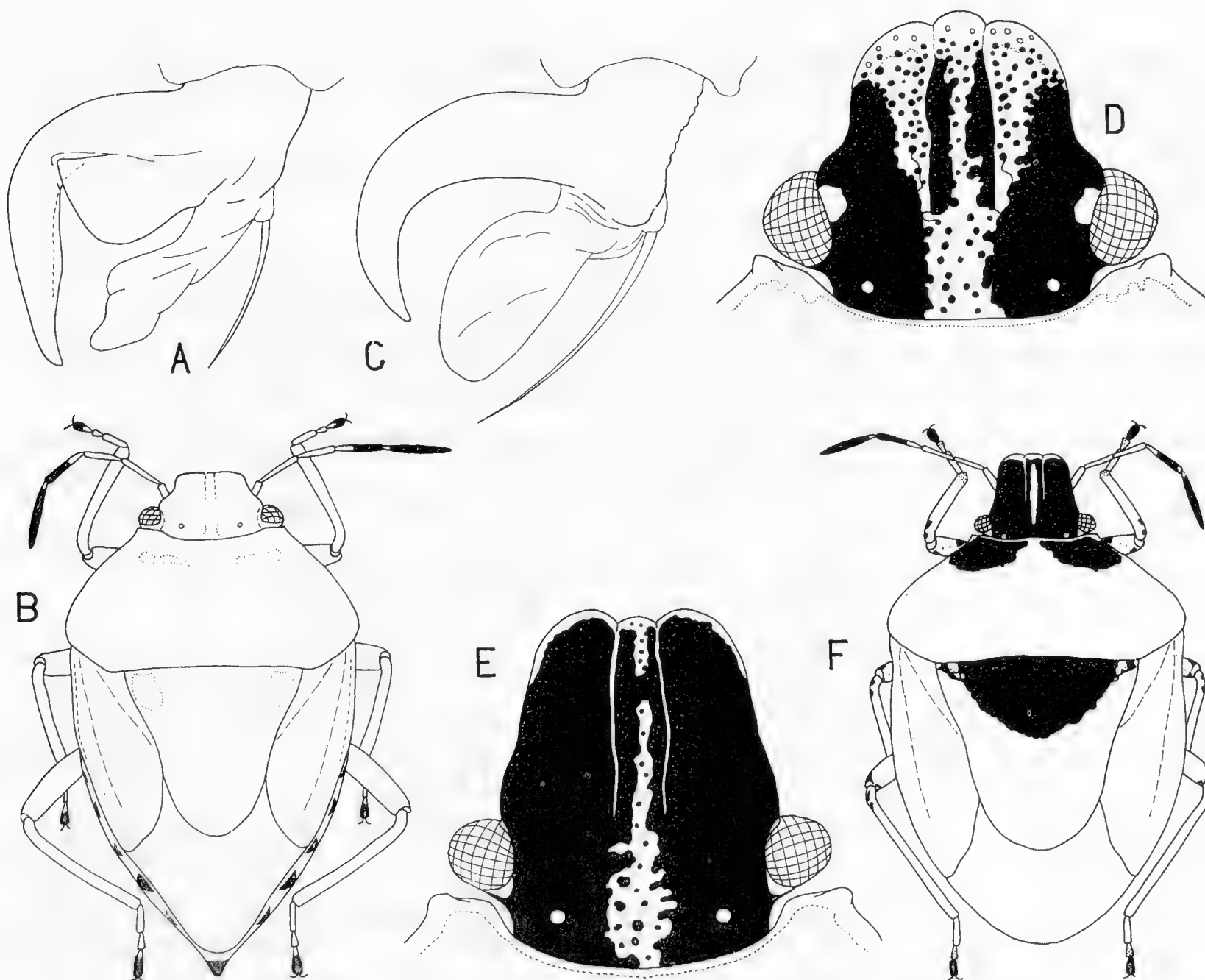


Fig. 75: A, *Stagonomus pusillus*; B, *Stagonomus amoenus*; C, E, *Eysarcoris aeneus*; F, *Eysarcoris fabricii*.

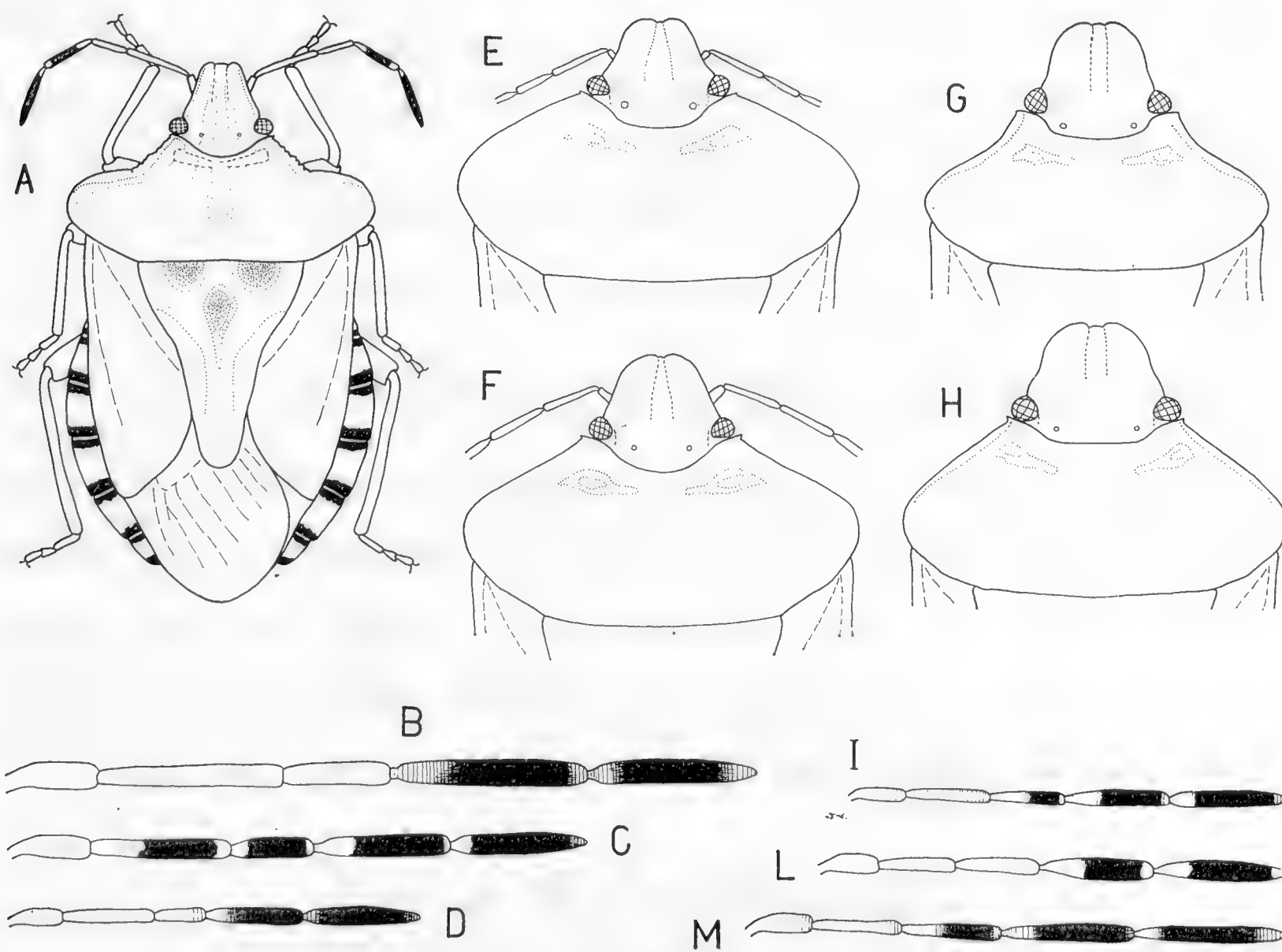


Fig. 76: A, B, *Codophila varia*; C, *Dolycoris baccarum*; D, *Antheminia lunulata*; E, *Palomena viridissima*; F, *Palomena prasina*; G, I, *Holcostethus albipes*; H, M, *Holcostethus sphacelatus*; L, *Holcostethus vernalis*

1. Dorso dell'addome con la colorazione gialla più estesa della nera (Fig. 62 C). Lungh. mm 7 - 8 *R. maculatus* (Fieb.)
Medioeuropeo - sibirico - anatolica; Italia settentrionale e appenninica montana fino al Lazio.
- Dorso dell'addome con la colorazione nera molto più estesa della gialla (Figg. 62 A D E) 2
2. Connexivi con grandi macchie alterne (Figg. 62 A E) 3
- Connexivi chiari o solo con una macchia nera piccola; disegni gialli dei tergiti come in Fig. 62 D. Gli esemplari estivi hanno spesso i connexivi completamente verdicci *R. parumpunctatus* Schill.
Eurosibirico - mediterraneo - turanica; tutta Italia e isole.
3. Scutello con la punta bifida. Tergiti neri con disegni gialli come in Fig. 62 A. Connexivi a macchie alterne gialle e nere. Lungh. mm 7 - 8 (Fig. 62 B) *R. subrufus* (Gmel.)
Cosmopolita; tutta Italia e isole.
- Scutello appuntito. Tergiti castaneo - neri con disegni giallo - rossicci non bene delimitati (Fig. 62 E). Connexivi con macchie alterne castanee e giallo - ocracee *R. conspersus* (Fieb.)
Mediterranea occidentale - euroturanica; tutta Italia e isole.

Genere *Stictopleurus* Stal (5 specie)

1. Parte anteriore del pronoto, tra il margine e l'incavo trasverso, regolarmente punteggiata (Fig. 63 C). Giallo - verde con punteggiatura nera o castanea. Lungh. mm 7 - 9 *S. punctatonervosus* (Goeze)
Mediosudeuropea; comune in tutta Italia e isole.
- Pronoto avanti all'incavo trasverso con una costa rilevata e liscia (Fig. 63 D) 2
2. Scutello con la punta molto arrotondata (Figg. 64 B C) e poco incavata. Apertura addominale della femmina, vista da dietro, più alta che larga (Fig. 63 E) 3
- Scutello con la punta meno arrotondata, più incavata e piegata verso l'alto (Figg. 64 E F). Apertura addominale della femmina più larga che alta. Giallo - grigio o rossiccio con punteggiatura nera. Lungh. mm 6 - 8 *S. crassicornis* (L.)
Nordeuropea medioeuropeo - anatolica; Italia settentrionale e appenninica montana fino in Abruzzo.
3. Corpo giallo - arancio o giallo - verde, pronoto con bande chiare molto deboli; punteggiatura in prevalenza a fondo giallo o castaneo. Addome della femmina da dietro in Fig. 63 E. Forma dello scutello da sopra e di lato nelle Figg. 64 C D. Lungh. mm 7 - 9 *S. abutilon* Rossi
Eurosibirica olomediterraneo - turanica; tutta Italia e isole.
- Regioni superiori giallo - rossicce, connexivi spesso verdi, capo e pronoto con distinte bande chiare, punteggiatura castanea; regioni inferiori giallo chiare. Forma dello scutello come in Figg. 64 A B. Lungh. mm 5,5 - 8 *S. pictus* (Fieb.)
Medioeuropeo - maghrebino - macaronesica; tutta Italia e isole.

Famiglia XXXIII. *Acanthosomidae* (Acantosomidi; 4 generi, 7 specie)

Fitofagi su diverse latifoglie dove succhiano le parti verdi, le bacche e le infruttescenze.

1. Specie grande 15 - 17 mm *Acanthosoma* Curt. (1 specie)
Mesosterno con carena prolungata in uno sperone che raggiunge il capo. Corpo giallo - verde, spesso con parte delle emielitre rossicce. Punteggiatura spaziata, nera (Fig. 65 E) *A. haemorrhoidale* (L.)
Eurosibirico - iranica; in gran parte dell'Italia, su faggio.
- Specie più piccole di mm 7 - 11 2

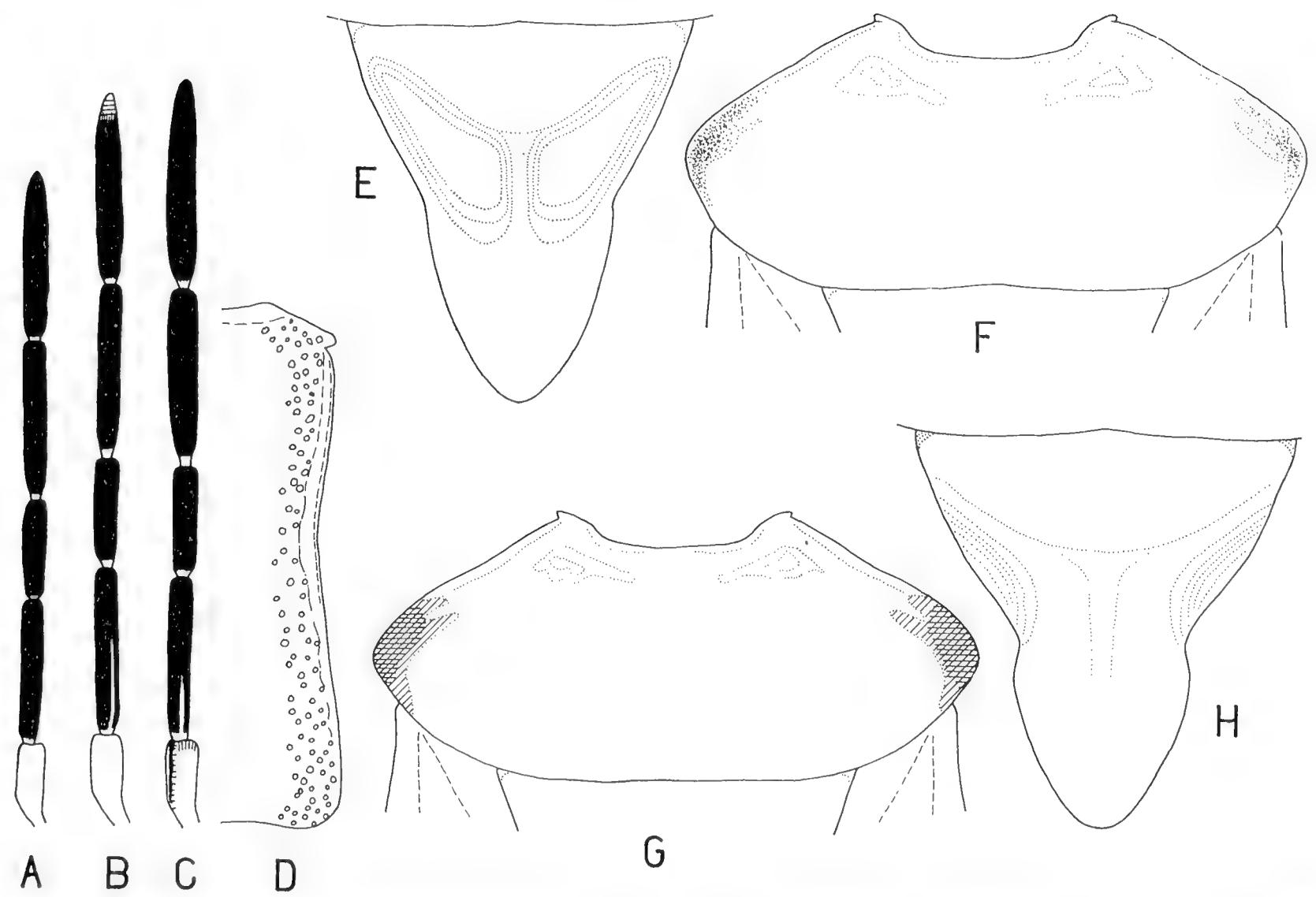


Fig. 77: A, D, *Carpocoris purpureipennis*; B, G, H, *Carpocoris pudicus*; C, E, F, *Carpocoris melanocerus*.

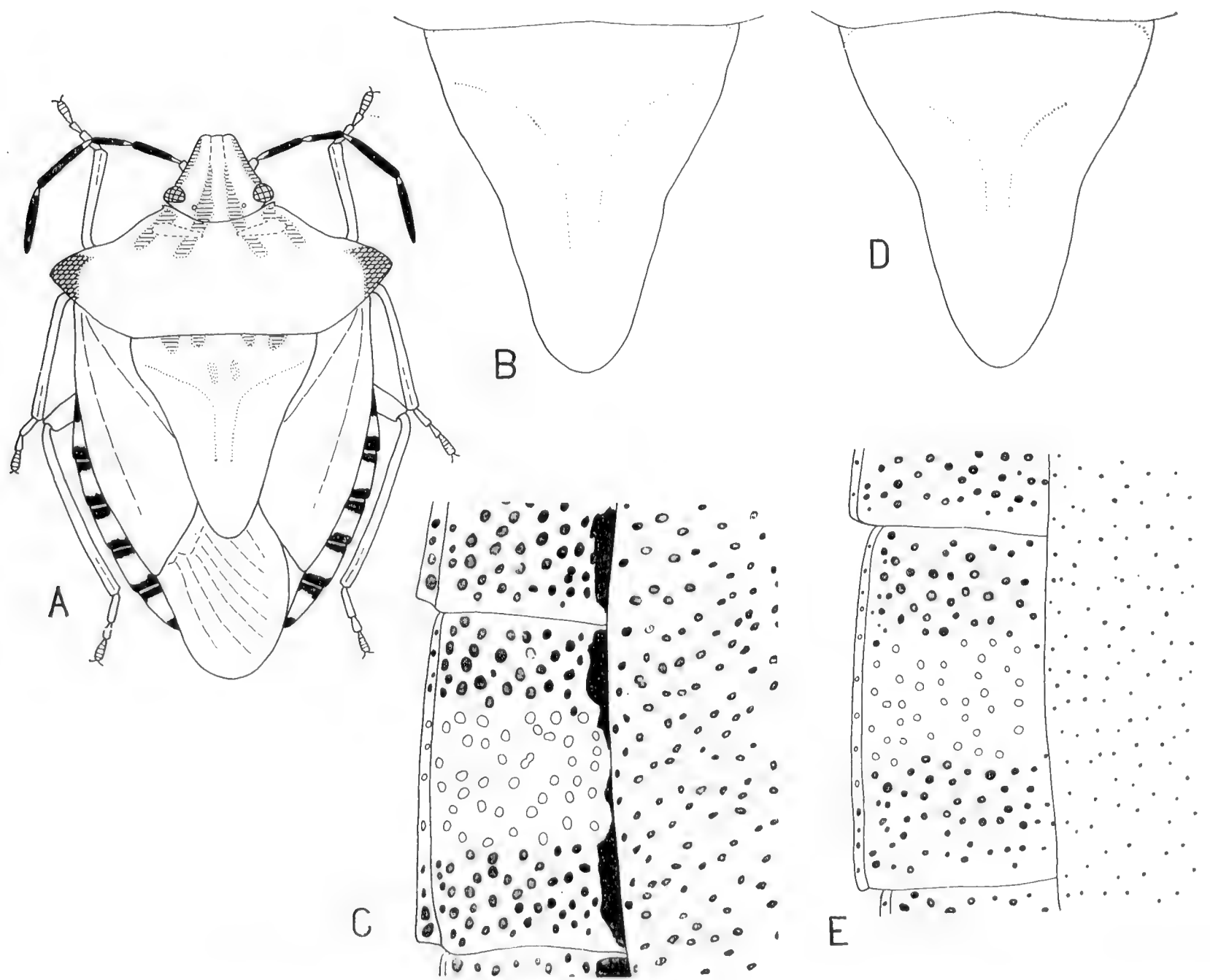


Fig. 78: A, B, C, *Carpocoris mediterraneus*; D, *Carpocoris purpureipennis*; E, *Carpocoris fuscispinus*.

2. Capo lungo quanto largo. Il primo articolo delle antenne non oltrepassa il capo (Fig. 65 C) *Cyphostethus* Fieb. (1 specie)
 Forma del corpo un poco più allungata che in *Acanthosoma* (vedi Fig. 65 E); punteggiatura chiara. Corpo verde con la metà interna del corio rossiccia. Lungh. mm 8 - 10 *C. tristriatus* (F.)
 Euroanatolico - tirrenica; Italia settentrionale e centrale, su ginepro.
- Capo più largo che lungo. Il primo articolo delle antenne, se piegato in avanti, oltrepassa il capo (Fig. 50 D) 3
3. Connexivi unicolori giallo - verdi *Elasmostethus* Fieb. (2 specie)
 Punteggiatura fine, nera. Corpo giallo - verde con la parte interna del corio e la base dello scutello rossiccia. La forma del corpo differisce da quella dell'*Acanthosoma*, Fig. 65 E, per gli angoli laterali del pronoto più arrotondati. Lungh. mm 8 - 11 (forma del capo in Fig. 65 D) *E. interstinctus* (L.)
 Eurosibirica; Italia settentrionale e centrale, su betulle e alni.
- Parte posteriore di ogni connexivo nera *Elasmucha* Stal (3 specie)
- a. Angoli laterali del pronoto allungati (Fig. 65 A) in una punta nera. Corpo verde-giallo con punteggiatura nera. Lungh. mm 7 - 8 *E. ferrugata* (F.)
 Europea centrosettentrionale - sibirica; nelle Alpi, su alni e mirtilli.
- b. Angoli laterali del pronoto arrotondati (Fig. 65 B); punteggiatura dell'addome verde come il corpo. Corio spesso rossiccio e macchia basale dello scutello castanea o nera. Lungh. mm 7 - 9 *E. grisea* (L.)
 Eurosibirica; Italia settentrionale e centrale, su alni e betulle.

Famiglia XXXIV. **Pentatomidae** (Pentatomidi; 44 generi, 139 specie)

1. Scutello grande, spesso prolungato fino all'estremità dell'addome (Figg. 81 D, 82 A) e con il margine laterale semplice (solo nel genere *Podops* la base presenta un breve incastro). Venature della membrana fra loro parallele e uscenti direttamente dal margine posteriore del corio (Fig. 66 B) Sottofam. III. *Podopinae* (v. dopo)
- Scutello triangolare, sempre più breve dell'addome (Figg. 72 A - D) e provvisto ai lati di una connessura per l'allogamento del margine interno della emielitra (Fig. 66 A, è visibile solo se si sposta un poco l'emielitra dallo scutello). Venature della membrana disposte in modo diverso (Fig. 66 M) 2
2. Punto di inserzione del rostro situato verso la metà del capo; base del labbro e del rostro distanziate fra loro. Primo articolo del rostro poco ingrossato in confronto ai seguenti e racchiuso fra le buccule, spesso fino alla base del capo (Figg. 66 D, F: L labbro, 1° R primo articolo del rostro, G buccule) Sottofam. II. *Pentatominae* (v. dopo)
- Punti di inserzione del labbro e del rostro (Fig. 66 C) a contatto o vicinissimi e posti pressoché all'estremità del capo. Primo articolo del rostro molto ingrossato rispetto ai seguenti e racchiuso fra le corte buccule solo per un breve tratto (Figg. C, E) Sottofam. I. *Asopinae* (v. dopo)

Sottofam. I. ASOPINAE (o *Amyotinae*)

Comprende 7 generi con 8 specie attive cacciatrici di uova e larve di insetti diversi.

1. Margine laterale del pronoto diritto e liscio (Figg. 67 A, B) 2
- Margine laterale del pronoto concavo nel mezzo e con la metà anteriore seghettata (Figg. 67 C, D, E) 3
2. Corpo lucente, completamente verde - azzurro. *Zicroma* Am. & Serv. (1 specie)
 Punteggiatura spaziata con intervalli lisci. Lungh. mm 4,5 - 8 (Fig. 67 B) *Z. coerulea* (L.)
 Cosmopolita; tutta Italia e isole, su piante diverse.
- Corpo poco lucente, giallo - grigio, di rado nero con macchie gialle *Jalla* Hahn (1 specie)

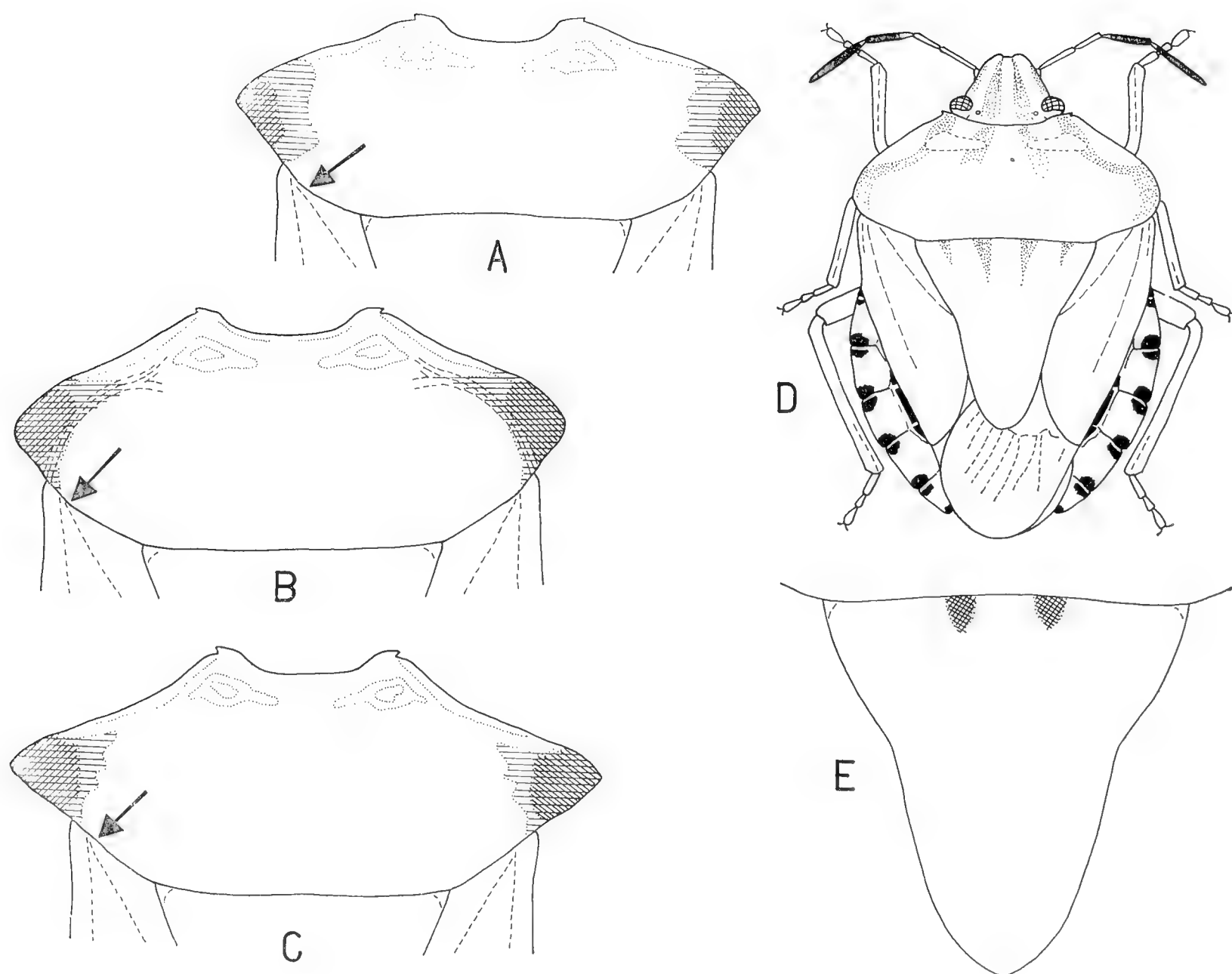


Fig. 79: A, *Carpocoris fuscispinus*; B, *Carpocoris purpureipennis*; C, *Carpocoris atlanticus*; D, E, *Antheminia lunulata*.

La forma più frequente è grigia con il grosso orlo laterale del pronoto, una linea mediana che va dal capo allo scutello ed un anello sulle tibie color giallo paglierino o arancio. Lungh. mm 12 - 15 (Fig. 67 A)

J. dumosa (L.)

Euromaghrebina turano-sibirica; tutta Italia e Sicilia.

3. Almeno la parte anteriore del capo e gli angoli laterali del pronoto sono verde-azzurri. Femori anteriori inermi

4

— Capo e pronoto con altri colori, se vi sono dei deboli riflessi azzurri i femori anteriori hanno una o due spine

5

4. Angoli laterali del pronoto arrotondati (Fig. 67 C); secondo sternite visibile con un piccolo sperone volto in avanti

Troilus Stal (1 specie)

Corpo giallo-grigio; connexivi a macchie alterne gialle e verde-azzurre. Lungh. mm 11 - 12

T. luridus (F.)

Eurosibirico-indiana; Italia montana.

— Angoli laterali del pronoto appuntiti, sterniti semplici (qui l'eurosibirico *Rhacognathus punctatus* (L.), da noi raro sulle Alpi).

5. Femori anteriori inermi

Arma Hahn (1 specie)

Corpo castaneo chiaro, connexivi a macchie alterne gialle e nere. Lungh. mm 11 - 13 (Fig. 67 D)

A. custos (F.)

Euroasiatica; tutta Italia, su latifoglie, di rado su resinose, dove caccia in prevalenza bruchi di lepidotteri.

— Femori anteriori con una o due spine

Picromerus Am. & Serv. (2 specie)

Castaneo, di rado il capo ha deboli riflessi azzurri; connexivi unicolori; antenne gialle (Figg. 66 C E, 67 E). Lungh. mm 10 - 13

P. bidens (L.)

Eurosibirico-turanica mediterranea occidentale; tutta Italia e Sicilia.

Sottofam. II. PENTATOMINAE (Pentatomini)

Comprende 27 generi e 73 specie fitofage, poche sono anche zoofage; nei generi *Aelia* ed *Eurydema* vi sono specie dannose alle coltivazioni.

1. Parte laterale anteriore del pronoto appiattita e con il margine tagliente; corpo piatto (Figg. 73 A, B) (*Sciocorini*) 6
- Parte laterale del pronoto non appiattita e con il margine provvisto di orlo; corpo convesso (Figg. 73 C, D) 2
2. Sterno, fra le anche anteriori e medie, con un canale per l'allogamento del rostro (*Aelini*, con corpo affusolato come in Figg. 73 C, D e 74 D) 8
- Sterno fra le anche anteriori e medie, privo di solco e spesso con carena (Figg. 68 A, E) 3
3. Secondo sternite, nel mezzo, con uno sperone rivolto in avanti (Fig. 68 E) o almeno con un tubercolo (Fig. 71 A) 19
- Secondo sternite semplice 4
4. Capo con la parte anteriore provvista di un orlo robusto e continuo. Orlo anteriore del pronoto simile ad un collare (Fig. 69 A). Corpo con macchie a colori contrastanti, giallo - azzurro o rosso - nero. Aperture odorifere piccole e nascoste dalle anche posteriori (*Eurydemini*) 18
- Orlo anteriore del capo sottile, colori del corpo non divisi in modo netto e fra loro contrastanti 5
5. Aperture odorifere sprovviste di peritrema (breve canale con margine rialzato che parte dall'apertura odorifera, vedi Figg. 68 A, B, D: in *P* peritrema, in *A* apertura odorifera). Corpo breve, convesso, lungo mm 5 - 6 (Figg. 68 C, 75 F) (*Eysarcorini*) 9
- Aperture odorifere con un distinto peritrema (Figg. 68 A, B, D). Corpo più allungato e meno convesso, lungo mm 6 - 14 (Figg. 70 A E, 78 A, 79 D) (*Carpocorini*) 10
6. Margine anteriore del capo, superiormente con una fila di minutissime spine, inferiormente con una fila di brevi e sottili peli (Figg. 69 B, C)

Menaccarus Am. & Serv. (2 specie)
M. arenicola (Sch.)

 Corpo largo, ovale, giallo - paglierino; connexivo con punteggiatura uniforme, chiara. Lungh. mm 4,5 - 7
 Mediterranea; Italia mer., Sicilia e Sardegna nei luoghi sabbiosi.
- Margine anteriore del capo glabro 7
7. Base dello scutello più larga del capo compresi gli occhi, angoli anteriori del pronoto con un dentino (Fig. 69 F)

Dyroderes Spin. (1 specie)
D. umbraculatus (F.)

 Corpo castaneo chiaro, angoli anteriori del pronoto e parte estrema dello scutello bianca. Connexivi bicolori. Lungh. mm 8 - 9
 Olomediterraneo - sudeuropea; tutta Italia ed isole sui *Galium*.
- Capo largo quanto la base dello scutello o più largo ed angoli anteriori del pronoto non dentati (Fig. 73 B)

Sciocoris Fall. (v. dopo)
8. Capo allungato triangolare. Secondo articolo delle antenne, teso in avanti, non sorpassa il capo (Fig. 73 D)

Aelia F. (v. dopo)
- Capo semiovale e secondo articolo delle antenne più lungo del capo

Neottiglossa Kirby (v. dopo)
9. Larghezza posteriore del pronoto, fra i due angoli posteriori (non fra i laterali) pressoché uguale alla larghezza basale dello scutello (Fig. 74 F, la freccia bianca indica l'angolo dello scutello e la nera del pronoto). Unghie prive di dente basale (Fig. 75 C)

Eysarcoris Hahn (v. dopo)
- Larghezza posteriore del pronoto maggiore della larghezza basale dello scutello (Fig. 74 G). Unghie con dente basale (Fig. 75 A)

Stagonomus Gorski (v. dopo)
10. Prosterno con il margine anteriore sporgente e nel mezzo curvato in modo da formare quasi una gola per la quale passa il rostro (Fig. 70 D). Rostro proteso fino al secondo sternite

Staria Dohrn (2 specie)

 Corpo con lunga peluria eretta, colore giallo - castaneo e punteggiatura nera. Sporgenze del prosterno molto accentuate (Fig. 70 D). Lungh. mm 7 - 7,5

S. lunata Hahn

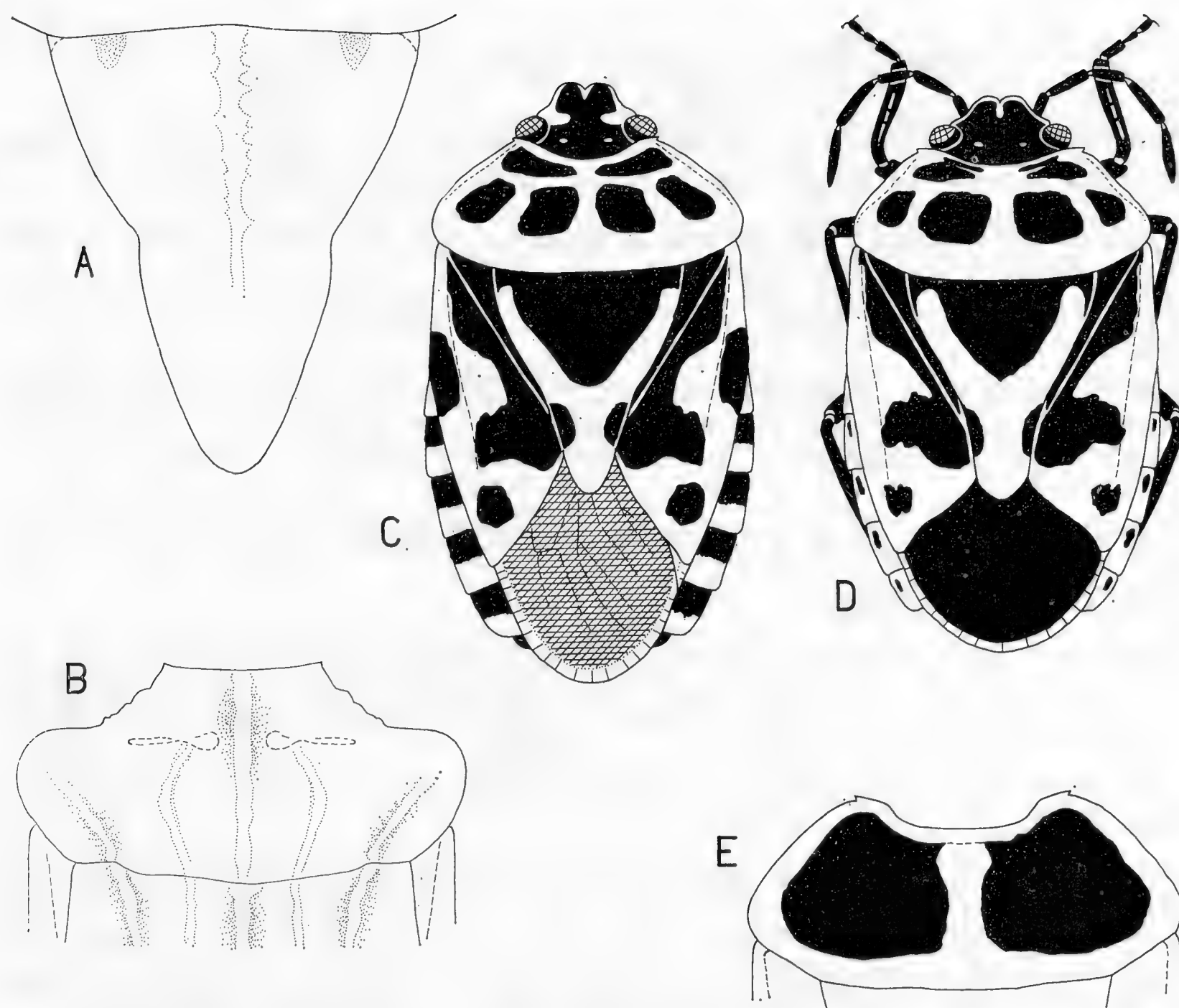


Fig. 80: A, *Antheminia varicornis*; B, *Sternodontus obtusus*; C, *Eurydema ventrale*; D, *Eurydema dominulus*; E, *Eurydema fieberi*.

- Sudeuropeo - mediterraneo - iranica; tutta Italia e Sicilia nei prati e negli incolti so-
leggiati.
- Margine anteriore del prosterno diritto (Fig. 68 A, M) 11
11. Capo, visto di lato, uniformemente convesso; guance appuntite e più lunghe del cli-
peo (Figg. 69 D, E) *Rubiconia* Dohrn (1 specie)
Corpo castaneo chiaro con punti neri e capo nero con riflessi verdi; clipeo spesso
chiaro e tale colore si prolunga non di rado anche sulla fronte. Lungh. mm 6,5 - 7,5
R. intermedia (Wolff)
- Medioeuropeo - asiatica; Italia settentrionale e centrale - montana, su diverse erbacee.
- Capo appiattito e guance non sporgenti in due punte (Figg. 70 A, E) 12
12. Corpo completamente verde o verde con i connexivi aventi la metà esterna e la
punta dello scutello bianca. Esemplari che svernano possono avere un colore ros-
siccio 13
- Corpo giallo - castaneo o con altri colori, se predomina il verde vi sono macchie al-
meno sullo scutello ed i connexivi sono a macchie alterne 14
13. Scutello e connexivi uniformemente verdi o verde - rossiccio
Palomena Muls. & Rey (v. dopo)
- Scutello verde con l'estremità bianca; connexivi con la metà esterna bianca
Pitedia Reuter (2 specie)
- Corpo ovale (Fig. 70 E), punteggiatura verde e margine del pronoto bianco - giallo.
Rostro fino al primo sternite. Lungh. mm 10 - 12 *P. juniperina* (L.)
- Eurosibirico - mediterraneo occidentale; tutta Italia e Sardegna, su ginepro.
14. Secondo e terzo articolo delle antenne pressoché di uguale lunghezza (di rado il se-
condo è 1,2 volte il primo) (Figg. 76 I, L, M) *Holcostethus* Fieber (v. dopo)

- Secondo articolo delle antenne almeno una volta e mezza più lungo del terzo (nella maggior parte dei casi è 2 volte il terzo articolo) 15
15. Corpo coperto da lunghi peli, specie ai margini (Fig. 70 B). Articoli delle antenne neri e bianchi come in Fig. 76 C *Dolycoris* Muls. & Rey (1 specie)
Corpo giallo o bruno-rossiccio con punti neri. Connexivi a macchie alterne gialle e nere. Lungh. mm 10-12 (Fig. 70 A) *D. baccarum* (L.)
Palearctica; comune in tutta Italia dal piano fino oltre i 2500 metri.
- Corpo glabro o con peli brevissimi; articoli delle antenne con colorazione diversa (Figg. 76 B, D) 16
16. Margine laterale del pronoto con un orlo regolare per tutta la sua lunghezza 17
- Margine laterale del pronoto privo di orlo nella sua metà anteriore ed irregolarmente arrotondato (Fig. 70 C) *Codophila* Muls. & Rey (1 specie)
Corpo da giallo-grigio a arancio-rosso con macchie nere come in Fig. 76 A. Lungh. mm 9-14 *C. varia* (F.)
Macaronesico-mediterraneo-turanica; tutta Italia e isole nei prati soleggiati e negli incolti.
17. Antenne con gli articoli terzo-quinto completamente neri; secondo articolo completamente nero o con una linea longitudinale chiara alla base. Peritrema lungo e stretto come in Figg. 68 A, B *Carpocoris* Kol.
- Antenne con i tre primi articoli chiari; terzo completamente chiaro o con la parte estrema oscurata; quarto e quinto assai variabili tra il rossiccio e il nero (Fig. 76 D). Peritrema breve (Fig. 68 D) *Anthemina* Muls. & Rey (v. dopo)
18. Capo con numerosi punti profondi, evidenti *Eurydema* Lap. (v. dopo)
- Capo quasi completamente liscio *Bagrada* Stal (1 specie)
Corpo ovale molto convesso in prevalenza nero. Capo nero con una fascia bianca, trasversa, avanti agli occhi. Scutello nero con il margine bianco. Lungh. mm 3,7-4,8 *B. stolata* Horv.
Estmediterraneo-turanica; Sicilia.
19. Angolo laterale del pronoto allargato a punta come in Fig. 71 E *Pentatoma* Oliv. (1 specie)
Corpo castaneo, capo ed angoli del pronoto con riflessi verdi; estremità dello scutello arancio. Capo e rostro come in Figg. 66 D, F *P. rufipes* (L.)
Eurosibirica mediterraneo occidentale; Italia settentrionale e appenninico-montana, Sicilia, su diverse latifoglie. Fitofago e zoofago.
- Pronoto con altra forma e colore 20
20. Secondo sternite con un tubercolo rivolto in avanti (Fig. 71 A) 21
- Secondo sternite con un lungo sperone rivolto in avanti (Fig. 68 E) 22
21. Ventre con una carena mediana. Lunghezza del capo avanti agli occhi pari a circa due terzi la sua larghezza (Fig. 71 B). Lunghezza mm 12-16 *Nezara* Am. & Serv. (1 specie)
Corpo verde chiaro uniforme o con il capo ed il margine anteriore del pronoto gialli. Gli esemplari che svernano tendono al roseo-castaneo (Figg. 71 A, C) *N. viridula* (L.)
Cosmopolita; tutta Italia e isole, su latifoglie.
- Ventre privo di carena. Lunghezza del capo avanti agli occhi più breve della metà larghezza (Fig. 71 F). Lunghezza del corpo mm 8-12 *Acrosternum* Fieb. (2 specie)
Corpo verde chiaro, di rado capo e pronoto sono gialli o tutto il corpo tende al roseo. Rostro proteso fino alle anche posteriori. Lungh. mm 8-10 *A. millierei* (Muls. & Rey)
Olomediterranea arabico-turanica; Italia appenninica, Sicilia e Sardegna.
22. Connexivi gialli o verde chiari. Punteggiatura superiore distribuita in modo uniforme *Piezodorus* Fieb. (1 specie)
Corpo liscio, verde-bianco uniforme o con la metà posteriore del pronoto ed il corio rosei. Lungh. mm 11-12 (Fig. 71 D) *P. lituratus* (F.)
Oloeuropeo-turanica mediterranea-occidentale; tutta Italia e isole, su latifoglie.
- Connexivi gialli con il margine anteriore e posteriore nero. Punteggiatura superiore riunita qua e là in modo da formare numerose, piccole macchie nere *Rhaphigaster* Poda (1 specie)
Corpo da giallo paglierino a giallo castaneo; membrana trasparente con piccole macchie castanee (Fig. 68 E, regione sternale). Lungh. mm 14-16 *R. nebulosa* (Poda)
Eurocentroasiatico-mediterranea; tutta Italia e isole. E' fitofago e zoofago.

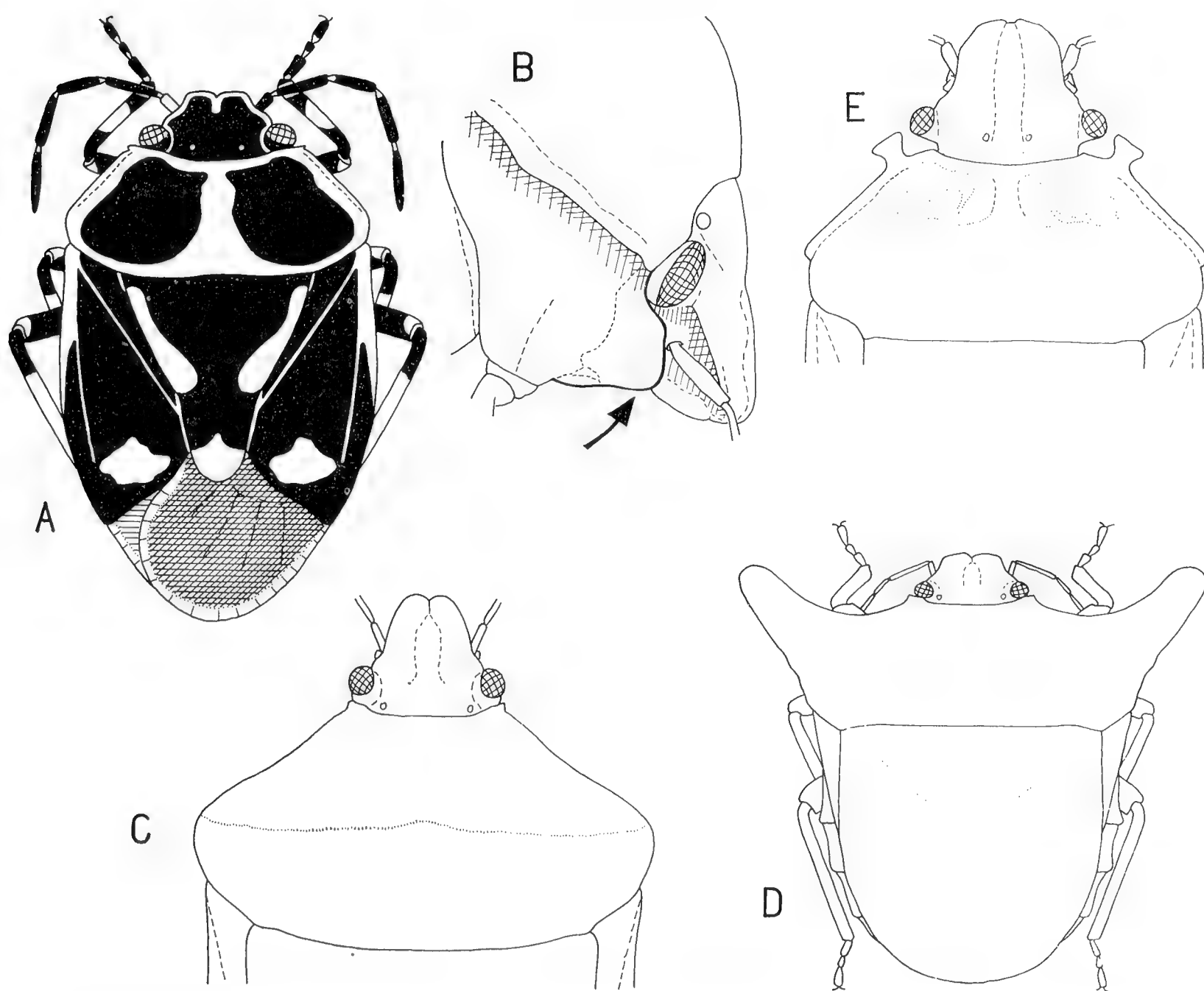


Fig. 81: A, *Eurydema oleracea*; B, C, *Ventocoris rusticus*; D, *Ventocoris falcatus*; E, *Podops inuncta*.

Genere *Sciocoris* Fall. (14 specie)

Corpo giallo-grigio, regioni sternali con macchia mediana, nera, che si può prolungare sugli sterniti. In prati e radure alla base delle erbe, sotto le foglie basali e sulle erbe stesse.

1. Occhi molto prominenti, peduncolati (Figg. 72 A B D, 73 A B) 2
- Occhi meno prominenti (Figg. 72 C E F) 4
2. Occhi peduncolati come in Fig. 72 A. Capo avanti agli occhi con una profonda incisione. Scutello e corio pressoché di uguale lunghezza. Lunghezza mm 6 - 7 2
S. macrocephalus Fieb.
Euroturanico - maghrebina; tutta Italia e isole.
- Occhi meno peduncolati, come in Figg. 72 B, D 3
3. Lunghezza del corpo mm 4,7 - 5,6. Capo triangolare con estremità arrotondata (Fig. 71 D). Primi sterniti addominali con una macchia mediana nera che nei maschi può raggiungere l'estremità dell'addome 3
S. microphthalmus Flor
Eurosibirica, nearctica; tutta Italia e Sicilia.
- Lunghezza mm 6 - 9. Capo meno ristretto anteriormente ed all'estremità arrotondato (Fig. 72 B). Pronoto più appiattito ed ai lati più allargato che nella specie precedente (Figg. 73 A, B) 3
S. homalonotus Fieb.
Sudeuropeo - macaronesico - iranica; Italia settentrionale, centrale, Sardegna.

4. Occhi sporgenti dal capo per meno della loro metà (Fig. 72 E). Margine laterale del pronoto con punteggiatura chiara anche posteriormente 5
- Occhi sporgenti dal capo per più della loro metà (Fig. 72 C). Margine laterale del pronoto nel terzo basale con punteggiatura nera. Lungh. mm 5 - 6 *S. sideritis* Woll. Mediterraneo occidentale; Italia meridionale, Sicilia e Sardegna.
5. Scutello con solco mediano longitudinale. Forma del capo come in Fig. 72 E. Corpo giallo - paglia compreso l'addome (è la nostra specie più chiara). Lunghezza mm 5,5 - 7 *S. sulcatus* Fieb. Mediterraneo - turanica; Italia appenninica e isole.
- Scutello regolarmente convesso; capo come in Fig. 72 F. Addome con due bande laterali nere, nel mezzo chiaro. Lungh. mm 4,5 - 6 *S. cursitans* F. Europea nordmediterranea - anatolica; tutta Italia e isole.

Genere *Aelia* Fabr. (6 specie)

Corpo allungato ovale (Fig. 73 D), giallo paglierino con bande longitudinali di punti nero o castanei. Vivono in modo preminente su graminacee (frumento, biada, orzo ed altre spontanee) dove succhiano anche i giovani semi causando, se in massa, gravi danni.

1. Femori sul lato inferiore solo con una macchia nera o senza 2
- Femori medi e posteriori con due macchie nere sul lato ventrale (Fig. 73 F). Capo come in Figg. 73 C - E. Lungh. mm 8 - 10 *A. acuminata* (L.) Eurosibirico - mediterraneo - turanica; comune in tutta Italia e isole.
2. Lunghezza del corpo superiore a mm 10 3
- Lunghezza del corpo mm 6,5 - 8. Capo visto di lato in Fig. 73 G *A. klugi* Hahn Eurosibirico - mediterranea (esclusa la P. Iberica); Italia settentrionale e centrale, Sicilia e Sardegna montana.
3. Buccule, viste di lato, con una apofisi appuntita nel mezzo (Fig. 74 B). Lungh. mm 10 - 12 *A. rostrata* Bohem. Medioeuropeo - nordmediterranea anatolico - iranica; in quasi tutte le nostre regioni ed isole.
- Buccule con il margine come in Fig. 74 A. Lungh. mm 10 - 12 *A. germari* Küst. Indoeuropeo - mediterranea; Italia appenninica e Sardegna.

Genere *Neottiglossa* Kirby (4 specie)

Corpo ovale, tozzo (Fig. 74 D), di colore giallo-grigio con le regioni sternali e il capo talvolta bronzee. In prati soleggiati su erbe diverse.

1. Scutello distintamente più lungo del corio; interspazi fra la punteggiatura dell'addome gialli. Lungh. mm 6 - 6,5 (Fig. 74 D) *N. leporina* (H. S.) Sudeuropeo - turanico - sibirica tirrenica; tutta Italia e isole.
- Scutello lungo circa quanto il corio 2
2. Addome nero - verde a riflessi metallici; capo pure oscurato e, visto di lato, curvato verso il basso (Fig. 74 E). Lungh. mm 5 - 6 *N. pusilla* (Gmel.) Eurosibirico - anatolica; tutta Italia e isole.
- Addome giallo - chiaro; capo, visto di lato, pressoché orizzontale (Fig. 74 C). Lungh. mm 5 - 6 *N. bifida* (Costa) Mediterranea; Italia appenninica, Sicilia e Sardegna.

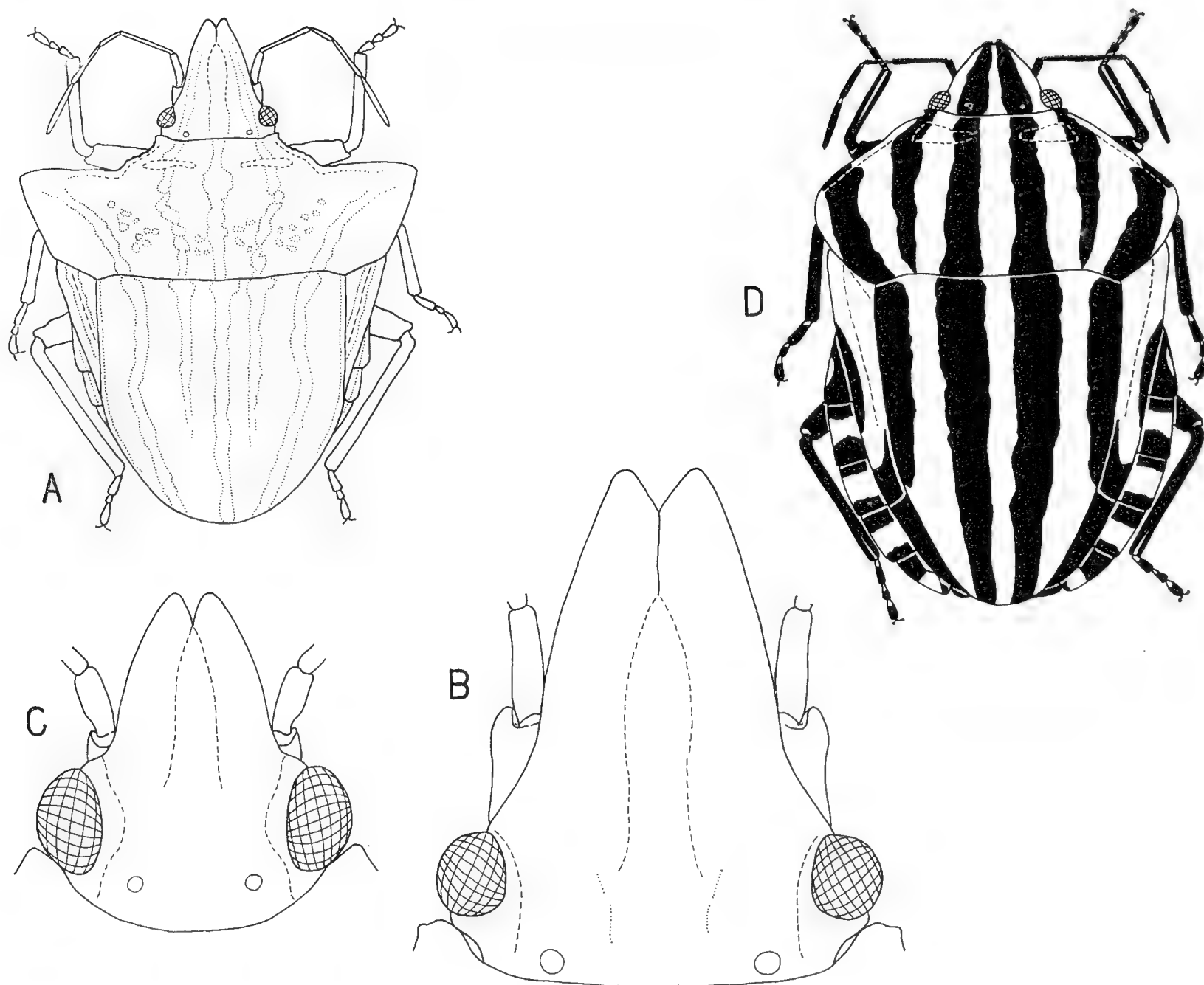


Fig. 82: A, B, *Ancyrosoma leucogrammes*; C, *Tholagmus*; D, *Graphosoma italicum*.

Genere *Eysarcoris* Hahn (3 specie)

Corpo ovale, molto convesso (Fig. 75 F), giallo-grigio, chiaro; capo e calli anteriori del pronoto verde-bronzei. Vivono su labiatee e poche altre erbe.

1. Scutello unicolore, giallo - grigio 2
 — Scutello con una macchia basale, triangolare, verde - bronzia, lucente (Fig. 75 F).
 Lungh. mm 5 - 6 *E. fabricii* Kirk.
 Mediterranea occidentale, eurosibirico - anatolica; tutta Italia e isole.
2. Capo nettamente più largo che lungo; tilo un poco più lungo delle guance (Fig. 75 D). Lungh. mm 5 - 6 *E. incospicuus* (H. S.)
 Euromediterraneo - turanico - afroindiana; tutta Italia e isole.
- Capo lungo quanto largo o circa 1/20 più breve della sua massima larghezza; tilo di poco più breve delle guance (Fig. 75 E). Lungh. mm 5 - 6 (Fig. 75 C, unghia) *E. aeneus* (Scop.)
 Eurosibirico - anatolica mediterranea occidentale; tutta Italia e isole.

Genere *Stagonomus* Gorski (4 specie)

Forma generale del corpo assai prossima a quella di *Eysarcoris*. Su cisti, timo, verbasco e altre piante di luoghi soleggiate.

1. Quarto articolo delle antenne nero con la base chiara e quinto completamente nero. Corpo rosso - castaneo, capo con punteggiatura nera assai fitta. Addome della femmina prolungato a cono (Fig. 75 B). Lungh. mm 6 - 8 *S. amoenus* (Brullé)
 Sudeuropeo - mediterraneo - turanica; pressoché in tutta Italia e Sicilia.

- Due ultimi articoli delle antenne più oscuri dei primi, mai neri. Corpo giallo - grigio, spesso con le regioni superiori tendenti al rosso. Lungh. mm 5 - 6 (Fig. 75 A, unghia)
S. pusillus (H. S.)
 Euroanatolico - tirrenica; Italia settentrionale e appenninico - montana, Sicilia e Sardegna montane.

Genere *Palomena* Muls. & Rey (2 specie)

1. Margine laterale del pronoto convesso; secondo articolo delle antenne almeno una volta e mezza il terzo (Fig. 76 E). Corpo completamente verde, di rado tende al rossiccio o al castaneo chiaro. Lungh. mm 10 - 13 *P. viridissima* (Poda)
 Eurosibirica siriana - indiana; Italia settentrionale, centrale - montana e Sardegna, su latifoglie. Specie fitofaga e zoofaga.
- Margine laterale del pronoto diritto; secondo articolo delle antenne lungo circa quanto il terzo (Fig. 76 F). Colore come nella *viridissima*. Lungh. mm 12 - 24 *P. prasina* (L.)
 Eurosibirica - mediterraneo - turanica; tutta Italia e isole, su latifoglie, erbe e frutta. E' la specie più frequente sulla nostra frutta (ciliegie, pesche, pere ed altra selvatica) sulla quale lascia spesso il suo caratteristico odore di "cimice".

Genere *Holcostethus* Fieber (4 specie)

Corpo giallo-castaneo o rossiccio, con macchie nere sulle parti inferiori e una densa punteggiatura nera sopra; punta dello scutello chiara. Vivono su erbacee e latifoglie.

1. Tilo chiuso anteriormente dalle guance. Antenne gialle con i due ultimi articoli in gran parte neri (Fig. 76 L). Lati del pronoto con il margine bianco assai esile. Lungh. mm 8,5 - 10 *H. vernalis* (Wolff)
 Eurosibirico - mediterraneo - turanica; tutta Italia e isole.
- Tilo libero anteriormente. Margine bianco ai lati del pronoto grosso circa quanto il primo articolo delle antenne 2
2. Margine laterale del pronoto diritto o leggermente convesso (Fig. 76 H). Antenne come in Fig. 76 M. Lungh. mm 9 - 10 *H. sphacelatus* (F.)
 Eurocentromeridionale - mediterranea occidentale; tutta Italia e isole.
- Margine laterale del pronoto concavo; capo circa 1/3 più largo che lungo (Fig. 76 G). Antenne come in Fig. 76 I. Lungh. mm 8 - 9 *H. albipes* (F.)
 Mediterranea; Italia padana e appenninica, Sicilia e Sardegna.

Genere *Carpocoris* Kolen. (6 specie)

Le macchie segnate nella Fig. 78 A sono comuni a tutte le specie, esse possono però ridursi fino a incerte macchie di punti neri. Succhiano diverse erbacee, ma con più frequenza composite e umbellifere.

1. Scutello con una leggera depressione semicircolare alla base delimitata da due triangoloidi (Fig. 77 E). Pronoto con angoli laterali arrotondati (Fig. 77 F) e più stretto dell'addome. Antenne in Fig. 77 C. Corpo grigio o grigio - arancio sopra e giallo - verde o giallastro sotto. Lungh. mm 11,5 - 14 *C. melanocerus* Muls. & Rey
 Europea centromeridionale - anatolica, montana; Italia settentrionale.
- Scutello con altra scultura o leggermente convesso. Addome più stretto del pronoto 2
2. Margine laterale dello scutello incavato ad angolo e superficie laterale che circonda l'angolo appiattita (Figg. 66 A, 77 H); angoli laterali del pronoto arrotondati (Fig. 77 G). Antenne in Fig. 77 B. Regioni inferiori del capo e del pronoto nelle Figg. 68 A, B e 83 C. Corpo giallo - verde, pronoto e corio spesso arancio o rossiccio. Lungh. mm 10 - 14 *C. pudicus* (Poda)

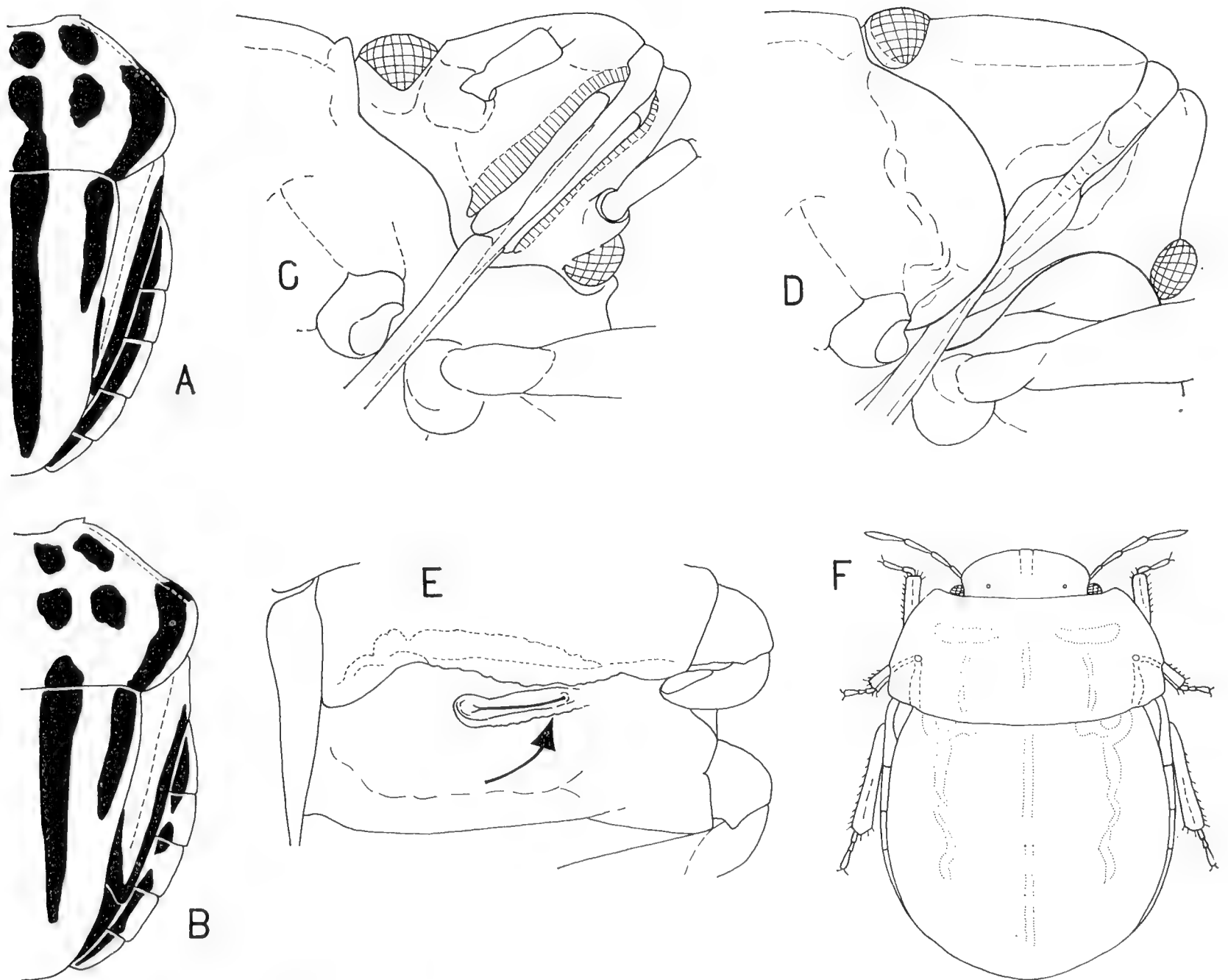


Fig. 83: A, B, *Graphosoma semipunctatum*; C, *Carpocoris pudicus*; D, E, *Eurygaster maura*; F, *Odontoscelis fuliginosa*.

- Medioeuropeo - submediterranea orientale e turanica; tutta Italia e Sicilia.
- Scutello uniformemente convesso o con una debole depressione longitudinale mediana nella parte centrale; margine laterale dello stesso nelle Figg. 78 B, D 3
3. Pronoto con gli angoli laterali arrotondati e con una depressione longitudinale laterale (Fig. 79 B). Margine laterale posteriore del pronoto (posteriormente all'angolo laterale) debolmente convesso (vedi freccia Fig. 79 B). Antenna e scutello nelle Figg. 77 A, 78 D. Corpo giallo - grigio con il corio e pronoto tendenti talvolta al rossiccio. Lungh. mm 11 - 13,5 *C. purpureipennis* (De Geer)
- Eurosibirico - anatolica; Italia settentrionale e centrale.
- Pronoto con gli angoli laterali acuti (Figg. 78 A, 77 A C) 4
4. Punteggiatura delle regioni superiori piccola e poco profonda (Fig. 78 E). Margine laterale posteriore del pronoto distintamente convesso (Fig. 79 A). Colore dominante è il giallo - verde, tendente spesso all'arancio, di rado al roseo. Lungh. mm 10,5 - 13,5 *C. fuscispinus* (Boh.)
- Eurosibirico - anatolica (esclusa Europa mediterranea); Italia settentrionale e centrale - montana.
- Punteggiatura delle regioni superiori più profonda e con interspazi convessi. Margine laterale posteriore del pronoto pressoché diritto (Figg. 78 A e 79 C). Colore del corpo verde - rossiccio, verde - arancione, spesso pronoto e corio sono arancio - grigio o rosso - mattone; regioni inferiori molto più chiare. Lungh. mm 10 - 13 *C. mediterraneus* Tam.
- Sudeuropeo - orientale - nordafricana; Italia padana e appenninica, Sicilia. In Sardegna e nel Mediterraneo occidentale vi è la razza *C. mediterraneus atlanticus* Tam. con gli angoli laterali del pronoto più lunghi ed acuti (Fig. 79 C).

Genere *Antheminia* Muls. & Rey (2 specie)

1. Corpo nettamente più lungo che largo; scutello circa 1/5 più lungo che largo (Fig. 80 A). Addome con una o due file di macchie nere. Corpo gialliccio con le parti superiori tendenti spesso al grigio-arancio o al rossiccio. Lungh. mm 9-10
A. varicornis (Jak.)
Sudeuropea orientale e anatolico-sibirica; Italia settentrionale, su composite.
- Corpo di poco più lungo che largo (circa 1/5); scutello pressoché lungo quanto largo. Addome privo di macchie regolari nere. Corpo giallo-verde con il corio e la metà posteriore del pronoto talvolta rossicci. Lungh. mm 6,5-9
A. lunulata (Goeze)
Europea centrorientale anatolico-turanico-sibirica; tutta Italia e isole, su composite.

Genere *Eurydema* Laporte (6 specie)

Gli esemplari quando escono dall'ultima muta hanno un colore bianco o avorio con macchie nere e raggiungono la colorazione definitiva (rossa con macchie nere o nero-azzurre) lentamente; il bianco diviene giallo poi arancio e infine rosso. Gli esemplari molto chiari sono quindi forme immature. Vivono prevalentemente sulle crucifere.

1. Dorso dell'addome tutto o in gran parte rosso 2
- Dorso dell'addome completamente nero o nero-azzurro 4
2. Exocorio (la fascia più esterna del corio) rosso con macchia nera (Fig. 80 C) 3
- Exocorio completamente rosso o arancio. Distribuzione delle macchie nere come in Fig. 80 D (se le macchie del pronoto sono come nella Fig. 80 E vedi *E. fieberi* al 3).
Lungh. mm 5,5-7
E. dominulus (Scop.)
Euro-sibirico-mediterranea occidentale anatolico-turanica; Italia settentrionale.
3. Parti oscure nero-azzurre. Exocorio con una macchia azzurro-nera che dall'angolo posteriore si allunga in modo vario verso la base. Macchie del pronoto come in Fig. 80 E. Lungh. mm 7,5-8,5
E. fieberi (Schml.)
Olomediterraneo-iranica; Italia peninsulare e Sardegna.
- Parti oscure nere. Exocorio con una macchia molto costante nel mezzo. Disegni come in Fig. 80 C. Lungh. mm 9-10,5
E. ventrale (Kolenati)
Sudeuropeo-sudmediterranea turanico-indiana; tutta Italia e isole.
4. Colori dominanti rosso o nero. Exocorio rosso con una macchia mediana nera. Distribuzione più frequente delle macchie prossima a quella di *E. ventrale* come in Fig. 80 C. Lungh. mm 7-9
E. ornatum (L.)
Olopaleartico-indiana; tutta Italia e isole.
- Colori dominanti verde-nero e giallo o rossiccio. Exocorio verde-nero con la base chiara. Macchie chiare nella forma tipica come in Fig. 81 A (le macchie chiare si possono ridurre a pochi punti). Lungh. mm 5-7
E. oleraceum (L.)
Euro-sibirica mediterraneo-turanica; tutta Italia e isole.

Sottofam. III. PODOPINAE (10 generi, 18 specie fitofaghe)

1. Margine anteriore del prosterno con un collare che circonda parzialmente gli occhi e nel mezzo ha un profondo incavo per il passaggio del rostro (Fig. 81 A) 2
- Margine anteriore del prosterno diritto 3
2. Corpo lungo mm 3-4 e simile a una pallina irregolare. Regioni superiori con sottili fasce ondulate, trasverse. Base dello scutello con un grosso callo trasverso
Vilpianus Stal (1 specie)
Corpo da giallo-paglierino a giallo-castaneo con 6 fasce trasverse, ondulate (2 sul pronoto, 4 sullo scutello)
V. galii (Wolff)
Euro-turanico-maghrebina; tutta Italia nei luoghi asciutti e soleggiati.
- Lunghezza del corpo superiore a mm 8
Ventocoris Hahn (v. dopo)
3. Pronoto e scutello con fasce longitudinali chiare, più o meno rilevate 4
- Pronoto e scutello privi di fasce, se presenti non rilevate 6
4. Capo allungato, triangolare, con le guance molto più lunghe del tilo e combacianti per un lungo tratto (Fig. 82 B). Buccule lunghe, rettangolari (osservare il capo di lato) 5

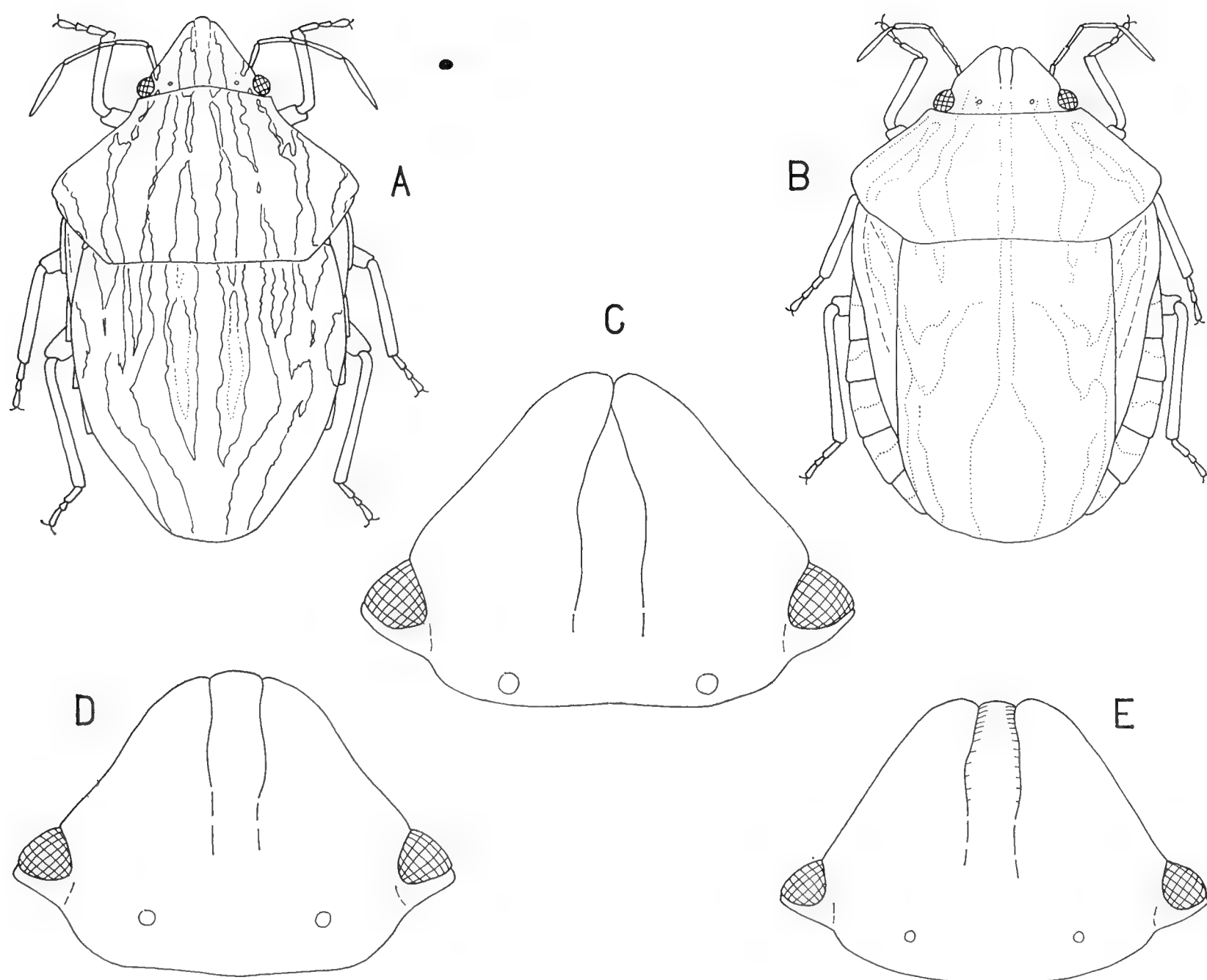


Fig. 84: A, *Odontotarsus purpureolineatus*; B, E, *Eurygaster testudinaria*; C, *Eurygaster austriaca*; D, *Eurygaster maura*.

- Capo più breve e convesso, buccule ovali. Guance di poco più lunghe del tilo (Fig. 82 C)
Tholagmus Stal (1 specie)
 Da giallo - paglierino a grigio - chiaro; pronoto con 5 deboli coste longitudinali, scutello con 3. Connexivi gialli, unicolori. Lungh. mm 7
T. flavolineatus (F.)
 Olomediterraneo - iranica; tutta Italia e isole, in luoghi ben soleggiati e sabbiosi su ombrellifere.
- 5. Pronoto con gli angoli laterali arrotondati (Fig. 80 B). Connexivi pressoché piani e con una macchia nera sulla linea di congiunzione dei vari segmenti
Sternodontus Muls. & Rey (2 specie)
 Corpo giallo - castaneo con la costa mediana e le due laterali molto più evidenti delle intermedie (Fig. 80 B). Lungh. mm 6,5 - 7
S. obtusus Muls. & Rey
 Sudeuropeo - sudmediterraneo - orientale; Italia settentrionale.
- Pronoto con gli angoli laterali acuti (Fig. 82 A). Connexivi con un profondo canale longitudinale, spesso castaneo
Ancyrosoma Am. & Serv. (1 specie)
 Corpo giallo - castaneo con le 5 coste longitudinali giallo chiare bene delimitate. Lunghezza mm 6 - 7,5
A. leucogrammes (Gmel.)
 Sudeuropeo - olomediterraneo - turanica; tutta Italia e isole.
- 6. Lunghezza del corpo mm 8 - 13. Regioni superiori con fasce longitudinali rosse e nere. Angoli anteriori del pronoto acuti (Fig. 82 D) *Graphosoma* Lap. Cast. (v. dopo)
- Lunghezza mm 5,5 - 7,7, mai con fasce rosse. Angoli anteriori del pronoto con una apofisi (Fig. 81 E). Corpo grigio, talvolta con una linea mediana più chiara
Podops Lap. (2 specie)
 Forma del pronoto come in Fig. 81 E. Lungh. mm 5,5 - 6,5
P. inuncta (F.)
 Europeo - mediterranea occidentale; tutta Italia e Sardegna in luoghi paludosi, lungo fossi e canali.

Genere *Ventocoris* Hahn (= *Trigonosoma* Lap.) (4 specie)

1. Pronoto con gli angoli laterali arrotondati (Fig. 81 C). Rostro proteso fino al secondo sternite. Metà posteriore del pronoto e scutello castanei, il resto del corpo giallo. Lungh. mm 8 - 9 *V. rusticus* (F.)
Nordmediterranea centrale; Italia padana e appenninica, Sicilia e Sardegna.
- Pronoto come in Fig. 81 D. Rostro proteso fino alle anche posteriori. Giallo - grigio. Lungh. mm 8 - 9 *V. falcatus* (Cyr.)
Mediterraneo - turanica; Italia meridionale, Sicilia e Pantelleria.

Genere *Graphosoma* Lap. (3 specie)

1. Ogni connexivo nel mezzo è rosso ed ai due estremi nero 2
- Ogni connexivo, nella metà esterna, per tutta la sua lunghezza è rosso (Fig. 83 A), nella interna nero. Regioni inferiori rosso chiare con punti neri; pronoto con due file di macchie nere assai variabili e scutello con 4 bande longitudinali nere. Lungh. mm 10 - 13 (Figg. 83 A B) *G. semipunctatum* (F.)
Sudeuropeo - olomediterraneo - turanica; tutta Italia e isole.
2. Antenne giallo - rosse con l'ultimo articolo e parte del quarto nero. Femori giallo-rossi con un anello nero all'estremità. Tibie chiare. Regioni inferiori rosso chiare con numerosi punti neri; pronoto con 6 e scutello con 4 bande nere in campo rosso. Lungh. mm 9 - 12 *G. lineatum lineatum* (L.)
Olomediterranea; Sicilia, Sardegna e parte dell'Italia meridionale (la distribuzione in Italia della razza tipica è incerta).
- Antenne completamente nere o con il secondo e terzo articolo in parte rosso. Femori neri o con due anelli rossi. Tibie nere. Punti e fasce nere come nella razza tipica. Lungh. mm 8 - 10 (Figg. 66 B, 82 D) *G. lineatum italicum* (Müll.)
Euroasibirica; Italia settentrionale e appenninica - montana. Comune su ombrellifere e spesso dannoso ai semenzai di tali essenze.

Famiglia XXXV. **Scutelleridae** (Scutelleridi; 7 generi, 23 specie)

Fitofagi delle zone soleggiate; si rinvencono sulle erbe e sotto le pietre. Quasi tutte le specie del genere *Eurygaster* sono dannose alle coltivazioni del grano.

1. Corpo coperto di peli brevi, semieretti, più lunghi e sottili ai margini. Tibie con brevi spine *Odontoscelis* Lap. (3 specie)
Corpo bruno, ovale, molto convesso e coperto da peli neri; pronoto e scutello spesso con 3 brevi linee longitudinali gialle (Fig. 83 F). Lungh. mm 6 - 11 *O. fuliginosus* (L.)
Euroasiatico - mediterranea; in tutta Italia, sotto le pietre e le foglie basali di piante erbacee.
- Corpo glabro o con micropeluria adagiata, molto breve anche ai margini 2
2. Metasterno privo di apertura odorifera 3
- Metasterno con apertura odorifera facilmente visibile (Fig. 83 E) (a seconda della posizione delle zampe, può essere talvolta nascosta dal femore posteriore) 4
3. Parte anteriore del capo, vista da sopra, triangolare; corpo ovale e molto convesso *Odontotarsus* Lap. (4 specie)
- Scutello lungo quanto l'addome e con l'estremità arrotondata; corpo giallo - arancio, spesso rossiccio con fasce longitudinali castaneo - nere (Fig. 84 A). Lungh. mm 9 - 11,5 *O. purpureolineatus* (Rossi)
Euroturanica (manca nella P. Iberica); tutta Italia e Sicilia.
- Parte anteriore del capo quadrangolare (Fig. 85 C); corpo meno convesso e rettangolare *Phimodera* Germ. (2 specie)

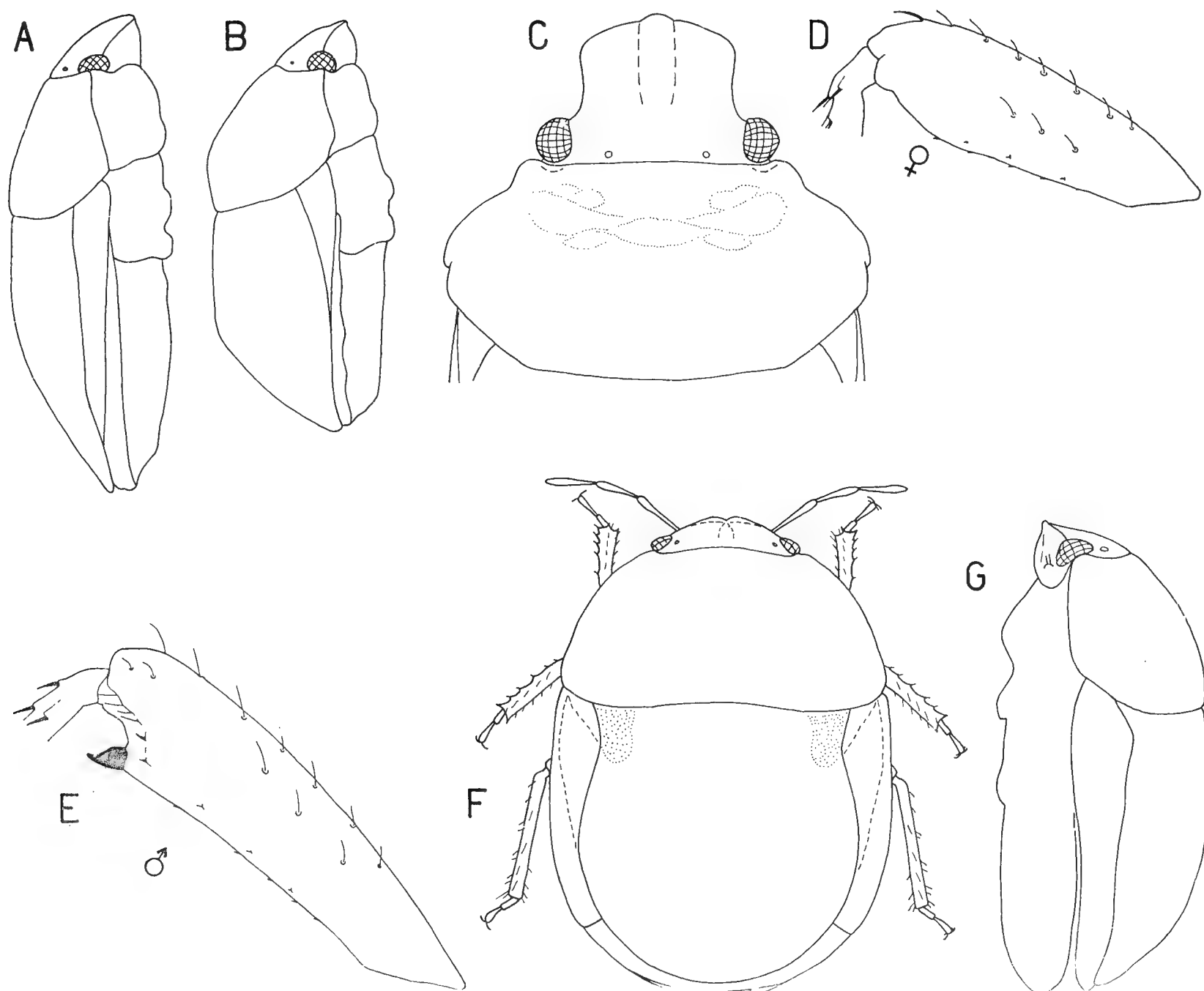


Fig. 85: A, *Eurygaster maura*; B, *Psacasta exanthematica*; C, *Phimodera flori*; D, E, *Macrosystus brunneus*; F, G, *Thyreocoris scarabaeoides*.

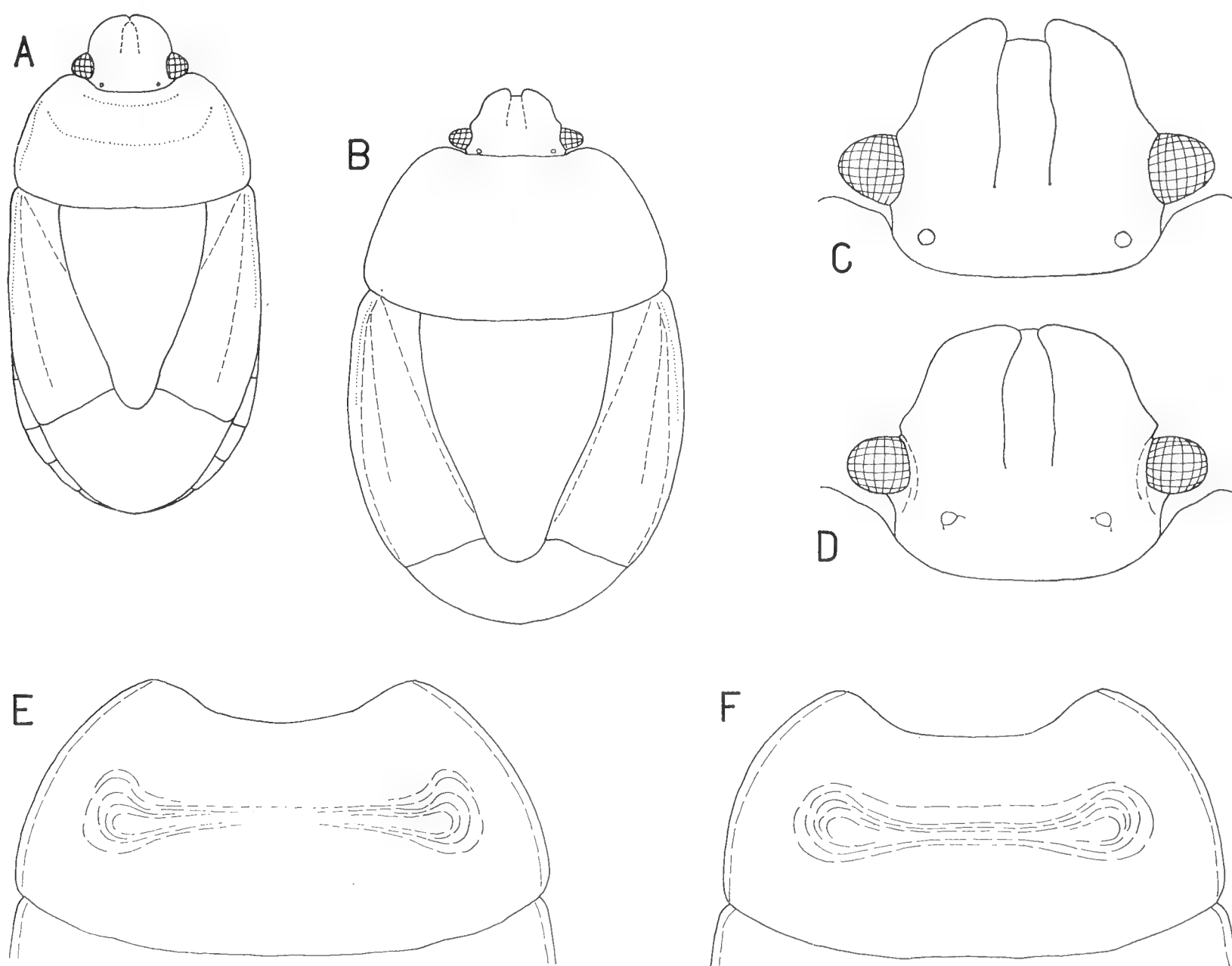


Fig. 86: A, *Ochetostethus balcanicus*; B, C, *Legnotus limbosus*; D, *Legnotus picipes*; E, *Sehirus dubius*; F, *Sehirus impressus*.

- Trocanteri inermi (osservare di lato); corpo giallo - grigio o nericcio, opaco con punteggiatura fine e densa, macchie indistinte. Capo e pronoto Fig. 85 C. Lungh. mm 5,5 - 6,5 *P. flori* Fieb.
Medioeuropea; Italia settentrionale, in luoghi sabbiosi, fra le radici delle graminacee.
4. Scutello ovale, a lati distintamente convessi e nel mezzo largo quanto l'addome. Corpo visto di fianco in Fig. 85 B *Psacasta* Germ. (6 specie)
Corpo nero o castaneo cosperso di numerosi punti chiari. Lungh. mm 9 - 11 *P. exanthematica* Scop.
Euroturanico - maghrebina; sotto borraginacee in tutta Italia e isole.
- Parte mediana dello scutello più stretta dell'addome ed a lati paralleli (Fig. 84 B), corpo meno convesso (Fig. 85 A) *Eurygaster* Lap. Cast. (v. dopo)

Genere *Eurygaster* Laporte (6 specie)

Vivono su diverse erbacee, con predilezione per le graminacee delle quali succhiano i semi ancora teneri, causando talvolta seri danni, specie al frumento. Il colore varia molto entro la tonalità del giallo-grigio, di rado tendono al rossiccio o sono neri. I disegni (Fig. 84 B) possono mancare completamente.

1. Tilo completamente racchiuso fra le guance che combaciano, all'estremità, per un breve tratto (Fig. 84 C). Lungh. mm 11 - 13 *E. austriaca* (Schr.)
Europea - centromeridionale mediterranea - occidentale (escluso il Nord Europa); tutta Italia e isole.
- Estremità del tilo libera, di rado le guance quasi si toccano in un punto racchiudendola 2
2. Ultimo tratto del tilo posto sullo stesso piano delle guance (Fig. 84 D). Terzo articolo delle antenne lungo circa metà del secondo (esso è da 0,45 a 0,59 volte il secondo). Lungh. mm 8 - 11 *E. maura* (L.)
Europeo - mediterraneo - turanica; comune in tutta Italia e isole.
- Parte estrema del tilo leggermente infossata rispetto alle guance (Fig. 84 E). Terzo articolo delle antenne distintamente più lungo della metà del secondo (è da 0,68 a 0,80 volte il secondo). Lungh. mm 8,5 - 10,5 *E. testudinaria* (Geoffr.)
Eurosibirico - mediterranea turanico - indiana; tutta Italia e isole (nell'Italia meridionale è specie montana).

Famiglia XXXVI. **Cydnidae** (Cidnidi; 10 generi, 30 specie)

Vivono in genere sul terreno, sotto i sassi, sotto le foglie basali delle piante erbacee, sulle piante e fra le radici: sono fitofagi.

1. Scutello arrotondato posteriormente a semicerchio e ricoprente circa tre quinti dell'addome (Figg. 85 F, G) (Sottofam. *Thyreocorinae* Am. & Serv. con un solo genere europeo) *Thyreocoris* Schr. (2 specie)
Corpo molto convesso con punteggiatura fine ed uguale, colore nero con debole riflesso bronzeo (Figg. 85 F, G). Lungh. mm 3 - 4 *T. scarabaeoides* (L.)
Euroanatolica - mediterranea occidentale; tutta Italia e Sicilia.
- Scutello a forma di triangolo e molto più stretto e breve dell'addome (Figg. 86 A B, 89 A) 2
2. Margine del capo, del pronoto e delle emielitre privi di pori setigeri (Sottofam. *Sehirinae* Am. & Serv.) (Figg. 86 e 87) 3
- Almeno il margine del pronoto e delle emielitre provvisti di pori setigeri (Fig. 88) (Sottofam. *Cydninae* Am. & Serv.) 5
3. Corpo a lati paralleli, piatto (Fig. 86 A), opaco, nero - castaneo. Mesosterno con un profondo canale e metasterno con una carena *Ochetostethus* Fieb. (3 specie)

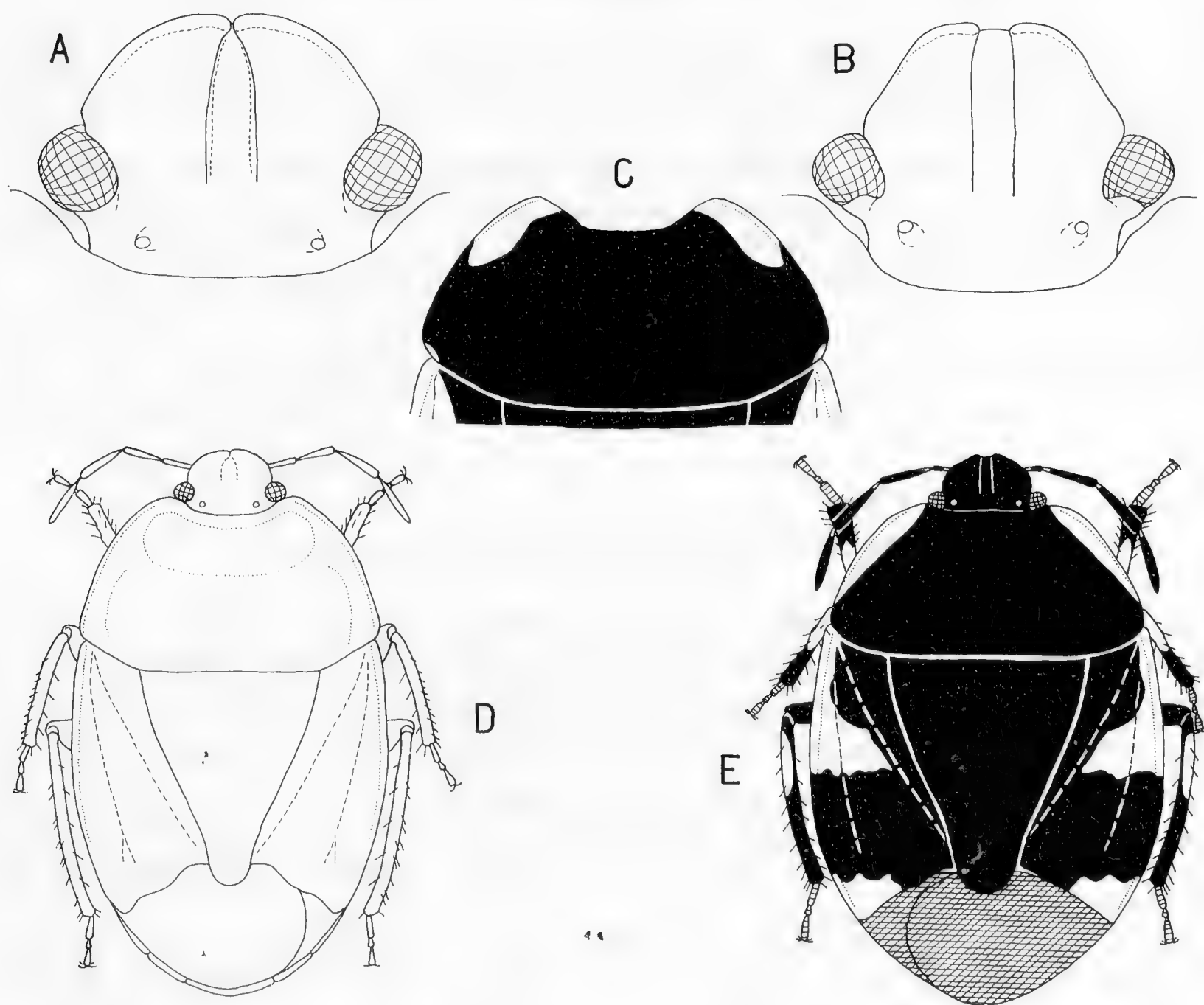


Fig. 87: A, D, *Sehirus luctuosus*; B, C, *Sehirus bicolor*; E, *Sehirus sexmaculatus*.

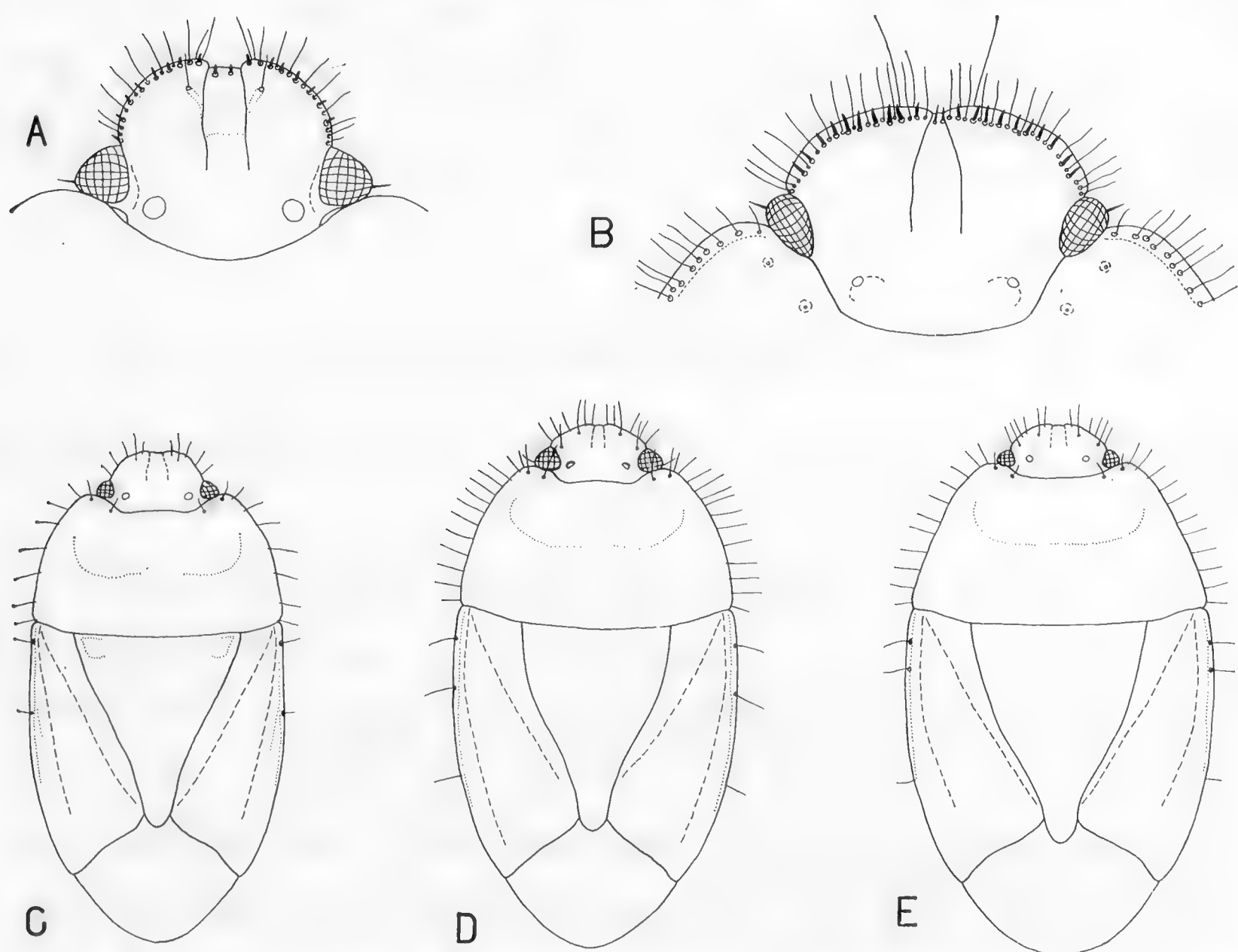


Fig. 88: A, *Byrsinus albipennis*; B, *Aethus nigratus*; C, *Geotomus elongatus*; D, *Geotomus brunnipennis*; E, *Geotomus punctulatus*.

- Scutello con l'estremità appuntita. Membrana delle emielitre bianchiccia, comprese le nervature (Fig. 86 A). Lungh. mm 2,6 - 3,5 *O. balcanicus* Wagner
Nordmediterranea - orientale anatolica; Italia padana e appenninica, Sicilia.
- Corpo ovale, convesso (Fig. 86 B), lucente, nero o azzurro, spesso con macchie chiare. Mesosterno con carena e metasterno semplice 4
4. Occhi conici e sporgenti lateralmente per circa due terzi della loro larghezza (Figg. 86 B, C, D) *Legnotus* Schiödte (v. dopo)
- Occhi rotondeggianti e sporgenti dal capo per circa la metà della loro larghezza (Figg. 87 A, B) *Sehirus* Am. & Serv. (v. dopo)
5. Scutello triangolare con la base uguale o leggermente più lunga dei lati *Cydnus* Fabr. (1 specie)
- Corpo castaneo nero, poco lucente o opaco. Membrana delle emielitre bianca. Maschio, nel terzo anteriore del pronoto, con una depressione semicircolare. Lungh. mm 8 - 12 *C. aterrimus* (Forst.)
Eurosibirica nordafricana indoaustrale (manca nelle regioni più fredde); tutta Italia nelle zone con euforie. La femmina depone le uova in una nicchia sotto qualche pietra e le sorveglia fino all'uscita delle neanidi.
- Scutello con la base nettamente più breve dei lati (Figg. 88 C, D, E) 6
6. Margine del capo provvisto di lunghe setole e di brevi spine (Figg. 88 A, B) 7
- Margine del capo con solo setole 8
7. Incavo anteriore del pronoto poco profondo, semiovale (Fig. 88 A) (qui il mediterraneo *Byrsinus albipennis* (Costa) che si rinviene in Sicilia).
- Incavo anteriore del pronoto profondo e trapezoidale (Fig. 88 B) *Aethus* Dallas (v. dopo)
8. Lunghezza del corpo inferiore ai 5 mm. Femori senza sperone *Geotomus* Muls. & Ser. (v. dopo)
- Lunghezza del corpo di circa mm 8. Femori posteriori del maschio con sperone (Fig. 85 E maschio Fig. 85 D femmina) *Macroscytus* Fieb. (1 specie)
- Corpo nero o castaneo - nero, lucente. Capo semicircolare e pronoto trapezoidale *M. brunneus* (F.)
Mediterraneo - centrasiatica macaronesico - afroindiana; Italia appenninica e isole.

Genere *Legnotus* Schiödte (3 specie)

1. Guance nettamente più lunghe del tilo (Fig. 86 C). Nero, poco lucente. Margine esterno delle emielitre liscio e bianco. Lungh. mm 3,5 - 4,5 *L. limbosus* Geoffr.
Europea - centromeridionale mediterraneo - turanica; tutta Italia e isole.
- Guance lunghe quanto il tilo (Fig. 86 D). Corpo nero con margine esterno delle emielitre gialliccio o castaneo chiaro. Lungh. mm 3 - 4 *L. picipes* (Fall.)
Eurosibirico - maghrebino - turanica; Italia settentrionale e appennino montana (in Sicilia e Sardegna vi è *L. fumigatus* (Costa) con le emielitre completamente oscure).

Genere *Sehirus* Am. & Serv. (11 specie)

1. Tilo anteriormente ristretto e talvolta completamente racchiuso fra le guance (Fig. 87 A) 3
- Tilo completamente libero e pressoché parallelo fino all'estremità (Fig. 87 B). Pronoto ed emielitre con macchie bianche (Subgen. *Tritomegas*) 2
2. Margine laterale bianco del pronoto esteso dall'angolo anteriore fin verso la metà (Fig. 87 C). Capo breve e largo (Fig. 87 B). Corpo nero - azzurro. Membrana delle emielitre bianca. Lungh. mm 6 - 8 *S. bicolor* (L.)
Eurosibirico - maghrebino - turanica; tutta Italia e Sicilia, su labiate.
- Margine laterale bianco del pronoto esteso quasi fino all'angolo posteriore (Fig. 87 E). Corpo nero - azzurro; membrana delle emielitre castaneo - nera. Lungh. mm 6 - 7,5 *S. sexmaculatus* (Ramb.)
Medioeuropeo - nordmediterraneo - anatolica; tutta Italia e isole.

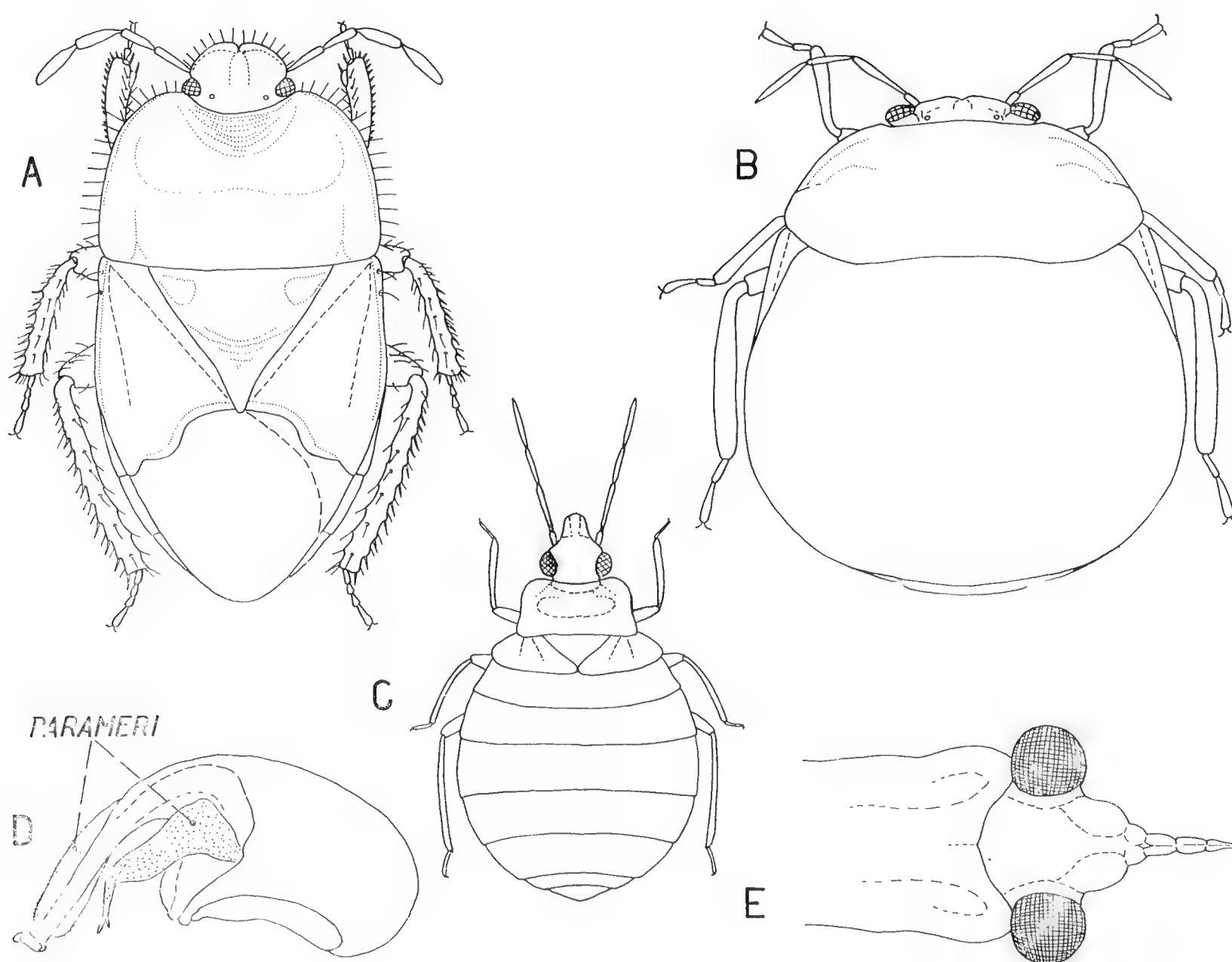


Fig. 89: A, *Cydnus aterrimus*; B, *Coptosoma scutellatum*; C, *Myrmedobia distinguenda*; D, *Arctocoris carinata*; E, *Ranatra linearis*.

3. Corpo nero, di rado nero-bronzeo; connexivi nericci, unicolori (Subgen. *Sehirus*) 4
- Corpo azzurro o azzurro-viola, lucente; connexivo a macchie alterne. Margine esterno del pronoto e del corio bianco-giallo (Subgen. *Canthophorus*) 5
4. Margine laterale del pronoto e delle emielitre chiaro. Corio con un callo puntiforme nel mezzo, quasi sempre bianco. Tilo non racchiuso completamente fra le guance. Lungh. mm 6-7 *S. biguttatus* (L.)
Eurosibirico-maghrebina; Italia settentrionale e centrale.
- Corpo nero, unicolore, poco lucente (Fig. 87 D). Lungh. mm 6-8 *S. luctuosus* Muls. & Rey
Euromaghrebino-turanica; tutta Italia.
5. Membrana delle emielitre nero-castanea. Depressione trasversa nel terzo anteriore del pronoto appena accennata. Lungh. mm 6,5-8 *S. melanopterus* (H. S.)
Sudeuropeo-mediterraneo-iranica; tutta Italia fino alle Prealpi e nelle isole.
- Membrana bianchiccia 6
6. Incavo trasverso nel terzo anteriore del pronoto profondo e distinto anche nel mezzo. Pronoto, presso la base, per un breve tratto, quasi parallelo, specie nei maschi (Fig. 86 F). Fronte avanti agli occhi convessa. Lungh. mm. 5-7 *S. impressus* Horv.
Sudeuropeo-montana; Italia alpina e appenninica oltre i 1500 metri.
- Incavo trasverso del pronoto nel mezzo accennato da una debole depressione. Pronoto ristretto in avanti fino dalla base (Fig. 86 E). Fronte avanti agli occhi piatta. Lungh. mm 6-8 *S. dubius* (Scop.)
Eurosibirico-irano-turanica (esclusa P. Iberica); Italia settentrionale e appenninica-montana.

Genere *Aethus* Dallas (4 specie)

1. Lunghezza del corpo mm 6,5 - 7; nero o nero - castaneo con membrana bianchiccia
A. pilosus (H. S.)
 Olomediterraneo - turanica; Italia meridionale e Sardegna.
- Lunghezza del corpo inferiore ai mm 6 2
2. Estremità del tilo con due spine (Fig. 88 B). Corpo nero, lucente, ovale. Lungh.
 mm 4 - 5
A. nigrinus (F.)
 Euroasiatica mediterranea - occidentale; tutta Italia e isole.
- Estremità del tilo provvista solo di due lunghi peli. Corpo castaneo, oscuro, lucente
 e con lunghi peli ai lati. Lungh. mm 2,5 - 3,5
A. flavicornis (F.)
 Medioeuropeo - sudmediterraneo - turanica; Italia appenninica, Sicilia e Sardegna.

Genere *Geotomus* Muls. & Rey (3 specie)

1. Parte mediana del corpo con lati paralleli; margine esterno del corio con due punti
 setigeri (Fig. 88 C). Nero - castaneo, lucente. Lungh. mm 4 - 4,5
G. elongatus (H. S.)
 Sudeuropea mediterraneo - turanica; Italia appenninica, Sicilia e Sardegna.
- Lati del corpo convessi anche nel mezzo 2
2. Pronoto trapezoidale (Fig. 88 E). Punteggiatura dello scutello poco profonda e picco-
 la. Lungh. 3,5 - 4,5
G. punctulatus (Costa)
 Atlantico - mediterranea; Italia appenninica e isole.
- Pronoto più semiovale che trapezoidale (Fig. 88 D). Punteggiatura dello scutello di-
 suguale, formata da punti piccoli, frammisti ad altri grandi. Lungh. mm 4,5 - 5
G. brunnipennis Wagner
 Nordmediterranea centrale; Italia appenninica e Sardegna.

Famiglia XXXVII. **Plataspidae** (Plataspidi; 1 genere, 1 specie)

Corpo trapezoidale, nero - verde, lucente, molto convesso e con le emielitre nascoste dal grande scutello che copre tutto l'addome (Fig. 89 B). Lungh. mm 3,5 - 4,5

Coptosoma scutellatum (Geoffr.)
 Eurosibirico - turanica (esclusi i paesi più freddi); tutta Italia e Sicilia, su papilio-

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RIASSUNTO

Chiavi semplificate per la determinazione delle specie più comuni di Eterotteri della fauna italiana. Sono trattate tutte le 37 famiglie, circa 240 generi (su circa 395) e circa 400 specie (su quasi 1400). Per ogni specie si riportano in sintesi alcune delle più evidenti caratteristiche morfologiche, le dimensioni, la distribuzione generale e quella italiana. Il lavoro è corredato da 89 gruppi di figure, per massima parte originali.

ABSTRACT

Keys for the determination of the commonest Italian Heteroptera.

Simplified keys regarding the commonest Heteroptera of the Italian fauna. All of the 37 families, about 240 genera (on a total of about 395) and about 400 species (on a total of almost 1400) are reported. For each species some of the obvious morphological characters, the dimensions and the general Italian distribution are briefly reported. The work has 89 groups of figures.

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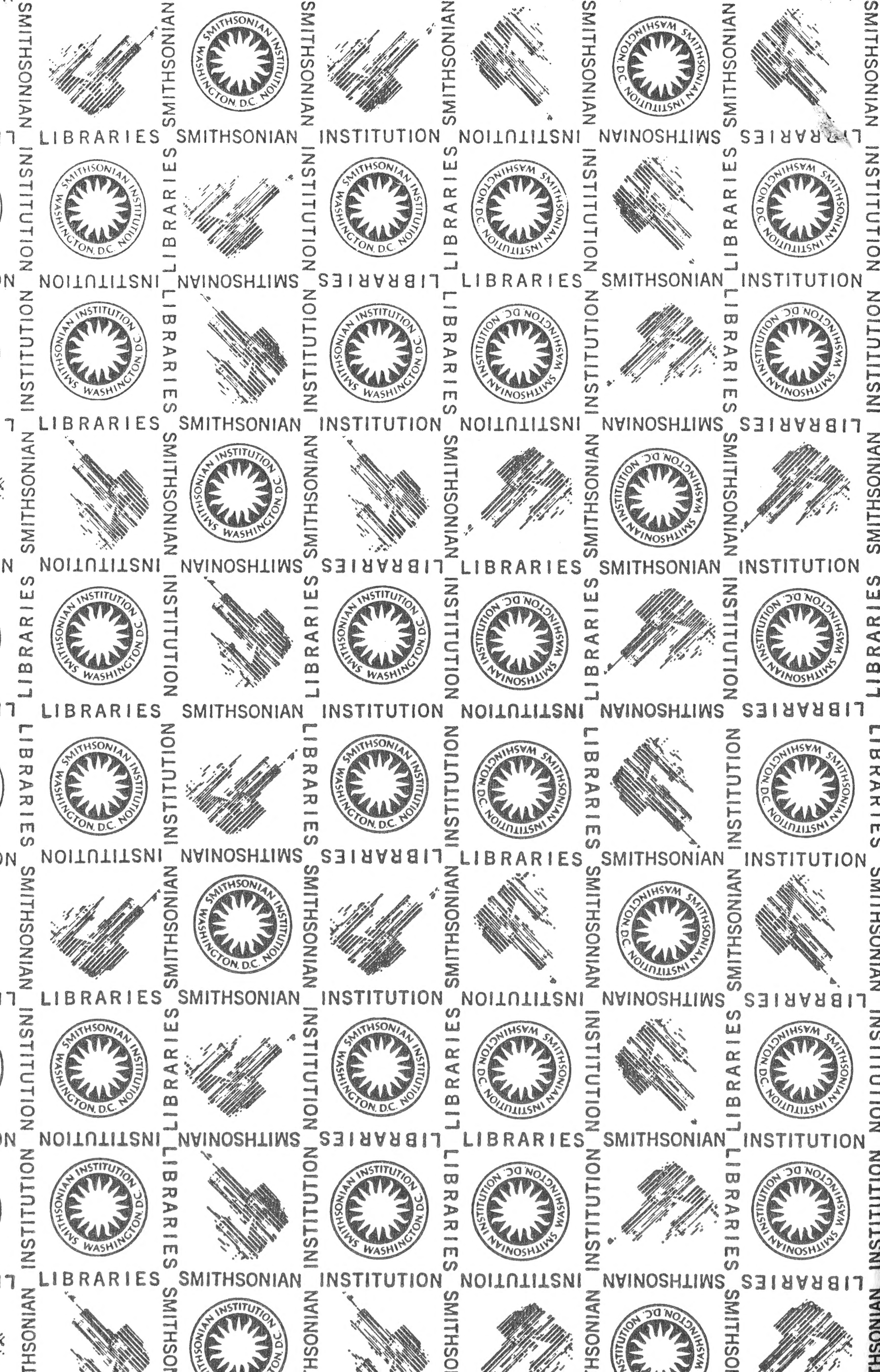
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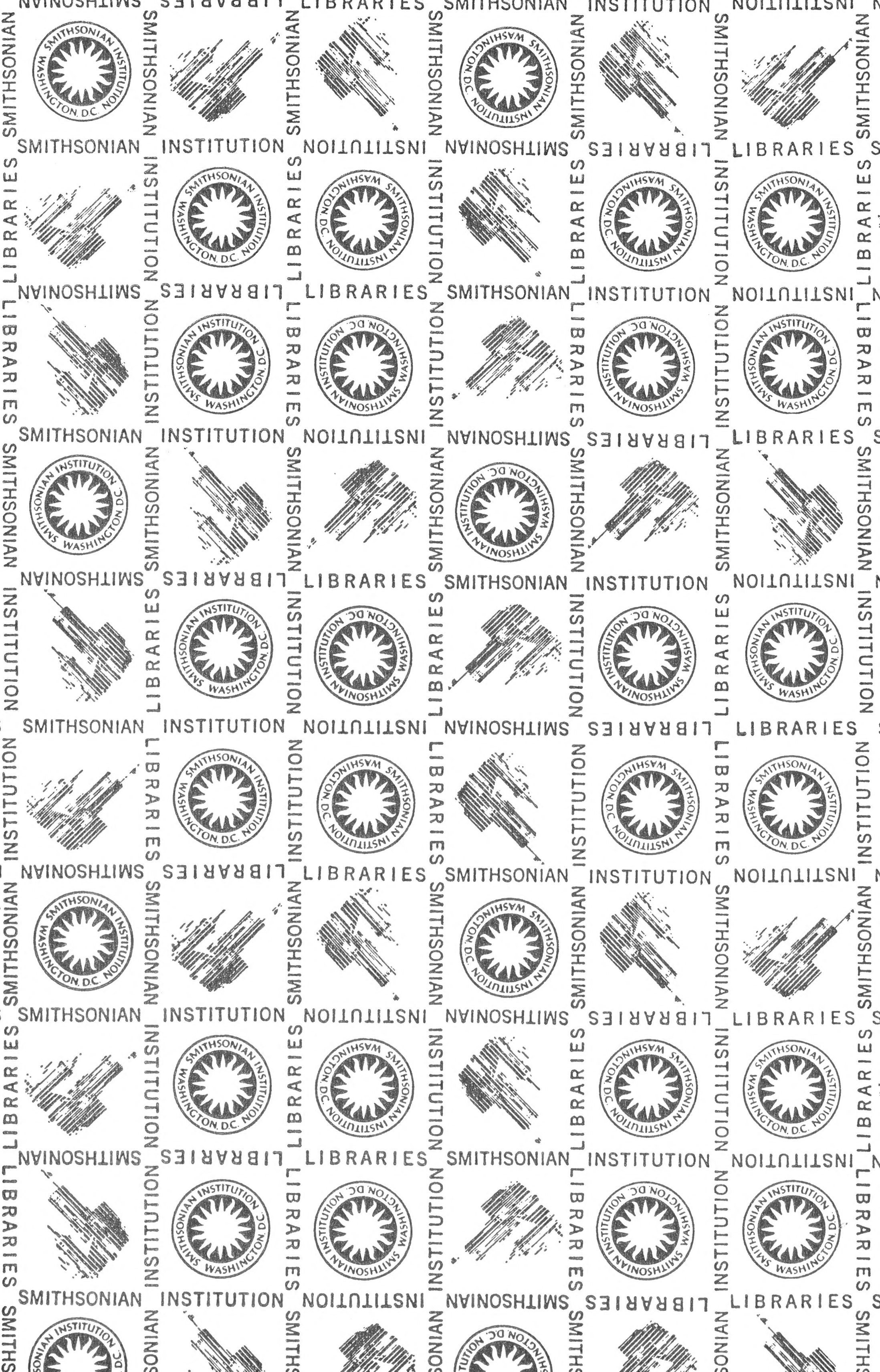
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